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TO THE

METEOROLOGY OF JAPAN.

BY

STAFF-COMMANDER THOMAS H. TIZARD,

H.M.S. "CHALLENGER."

Published by the Authority of the Meteorological Committee.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
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SEVERAL lighthouses have been, since 1870, established on the south-east and south-west coasts of Japan and in the Inland Sea. At each lighthouse a meteorological register is kept; at the end of each month these registers are transmitted to the head office for lighthouses at Yokohama, and at the end of the year they are bound together, so that a valuable series of observations are being made and collected in such a manner as to render them easy of access and reference. Mr. Brunton, the Superintendent of Japanese Lighthouses and Buoys, most kindly lent the records he has already collected to Professor Wyville Thomson, of H.M.S. "Challenger," for use on board; and, as the general results obtained by us from the registers are very interesting, and so little is known about the meteorology of Japan, I have drawn up the following account of the knowledge we have derived from them.

The instruments in use at each building consist of a mercurial barometer, a thermometer, and a rain-gauge.

The barometer is fixed in the light room immediately below the lantern, and the thermometer is placed in the gallery outside the lantern in the air and shade.

The barometer, its attached thermometer, and the thermometer in the air are registered daily at 9 a.m. and p.m. as is the direction of the wind. The general strength of the wind during the day is noted in a column appropriated for that purpose, but the Beaufort scale is not used, the wind being simply registered as light, moderate, fresh, gale, &c. Another column is used to note the daily state of the weather, whether fair, overcast, foggy, hazy, rainy, &c. The amount of rainfall is registered every 24 hours.

From these records I have constructed tables showing the mean pressure of the air, the extreme range of pressure, the mean temperature in the shade, the mean amount of rainfall, the mean number of rainy days, and the mean number of days the wind blew from each quarter, for each month of the year.

In constructing these tables some little difficulty was experienced with the barometric results, as the barometers, being placed in the light-room immediately below the lantern, are a considerable height above the sea level; and, as this height is not exactly known, I have assumed it to be 10 feet less than the height of the lantern given in the Admiralty list of lights for 1874, in order to reduce the observations to the level of the sea. The attached thermometer having been always registered with the barometer the results have also been reduced to the temperature of 32° F.

Since the instruments have been in use they appear never to have been compared with a standard nor could we ascertain their original errors; the results, however, agree pretty closely, especially where the record is continuous for four years. In three cases the barometer appears to be in error and of these cases I shall treat subsequently.

The lighthouses at which registers have been kept are 12 in number, besides two light-vessels,—four on the south-east coast, four on the south-west coast, and four on the Inland Sea, the light-vessels being at Hakodati and Yokohama. In addition to the lighthouse records we were furnished by Dr. Mueller, the director of the Medical Academy at Yedo, with a copy of a meteorological register kept at Yedo for two years by Mr. Knipping, a German gentleman residing in that city.

The four lighthouses on the south-east coast at which registers have been kept are Cape Sagami, at the entrance of the Gulf of Yedo, Rock Island off Simoda, Oosima Island, and Siwo Misaki, the south point of Nipon Island. These registers are complete from January 1871 to December 1874, a period of four years.

The four lighthouses on the south-west coast at which registers have been kept are Saton Misaki, at the southern point of the Japanese group of islands, Nagasaki, Rokuren, off the entrance of Simonoseki Strait, and Isaki, just inside Simonoseki Strait.

Saton Misaki, so far as position is concerned, belongs quite as much to the south-east as to the south-west coast, but as its results agree more nearly with those obtained at Nagasaki than with those of the south-east coast lighthouses, it has been classed as a south-west coast position.

The registers at Saton Misaki and Nagasaki are complete from January 1871 to December 1874, but that at Rokuren only extends from the 1st January 1872 to the 31st July 1873, and that at Isaki from the 2nd March 1872 to 31st July 1873, and from 1st April 1874 to 31st December 1874.

The four lighthouses in the Inland Sea at which registers have been kept are Isumi on Tomangai Sima, at the eastern entrance of the Inland Sea; Awadji, on the north extreme of Awadji Island; Nabe Sima, in the straits leading from Harima Nada to Bingo Nada; and Isauri Sima, in the straits leading from Bingo Nada to Suwo Nada.

The register at Isumi extends from 1st August 1872 to 31st July 1874, of Awadji from 1st August 1871 to 31st July 1874, of Nabe Sima from 1st January 1873 to 30th April 1874, with the exception of the month of November for which no return has been made, and of Isauri Sima from 1st July 1873 to 30th June 1874.

At the light-vessel at Hakodati the register extends from the 1st May 1873 to 31st December 1874.

At the light-ship at Treaty Point, Yokohama, the register extends from 1st January 1871 to 31st December 1874, with the exception of the months of February, July, and August 1874, for which no returns have been made.

Neither light-ship is provided with a rain-gauge. The Tables constructed from the information thus acquired are as follows:—

JAPAN.—South-East Coast.

Cape Sagami Lighthouse.

Meteorological Table compiled from Observations made between the 1st March 1871 and the 31st December 1874.

Position of Lighthouse, Lat. 35° 8′ N., Long. 139° 41′ E. Height of Lantern, 110 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·233	0·55	43·7	1·56	5	3	18	0	1	0	3	3	2	1	1	0
February -	30·237	0·85	43·4	1·15	6	7	13	0	1	0	3	2	1	1	0	0
March -	30·196	1·20	49·2	2·99	8	9	12	0	1	1	4	0	2	2	1	0
April -	30·002	1·00	58·8	1·60	8	7	8	0	0	2	7	1	0	5	1	0
May -	29·800	1·05	65·5	2·57	5	5	6	1	3	5	5	1	0	5	1	1
June -	29·681	0·70	70·4	6·63	11	4	6	3	1	5	5	0	0	6	0	0
July -	29·459	0·75	78·2	4·25	6	2	5	1	3	7	7	1	0	5	0	1
August -	29·371	1·20	80·2	5·03	10	2	3	1	1	7	13	0	0	4	0	0
September -	29·582	1·00	73·6	7·91	9	7	13	0	2	3	3	0	0	2	1	0
October -	29·890	1·03	64·2	7·33	12	8	17	1	0	1	2	1	0	1	1	0
November -	30·038	1·05	56·2	4·76	7	4	16	1	0	0	5	1	1	2	0	0
December -	30·158	0·98	48·9	2·36	5	6	17	0	0	0	3	1	1	3	0	1
Means and totals	29·887	—	61·0	48·14	92	64	134	8	13	31	60	11	7	37	6	3

JAPAN.—South-East Coast.

Rock Island Lighthouse.

Meteorological Table compiled from Observations made between 1st January 1871 and the 31st December 1874.

Position of Lighthouse, Lat. 34° 34′ N., Long. 138° 57′ E. Height of Lantern, 164 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·291	1·34	46·9	1·96	10	2	8	0	0	0	1	13	1	6	5	0
February -	30·301	1·00	46·4	1·73	7	2	11	1	0	0	1	9	1	3	4	0
March -	30·283	1·20	49·5	4·98	9	0	11	1	0	1	2	5	1	10	1	0
April -	30·110	1·25	59·5	6·23	8	0	8	1	1	1	4	7	0	8	2	0
May -	29·919	1·07	65·7	3·30	7	0	10	2	1	1	4	2	0	11	1	1
June -	29·779	0·75	71·0	5·08	9	0	12	2	1	1	5	4	0	5	1	3
July -	29·563	0·68	77·9	3·52	6	0	9	1	1	2	7	5	0	6	1	2
August -	29·481	0·90	80·4	5·99	11	0	5	1	1	2	11	6	0	5	3	0
September -	29·695	0·90	73·6	7·32	11	1	16	1	1	0	4	2	0	5	3	0
October -	29·965	1·00	65·9	12·75	10	1	21	1	0	0	1	3	1	3	4	0
November -	30·141	1·10	58·2	4·64	7	1	11	1	0	0	3	7	2	5	1	0
December -	30·245	0·95	52·4	3·44	9	2	10	0	0	0	2	9	1	7	1	0
Means and totals	29·981	—	62·3	60·94	104	9	132	12	6	8	45	72	7	74	27	6

JAPAN.—South-East Coast.

Oosima Lighthouse.

Meteorological Table compiled from Observations made between 1st January 1871 and the 31st December 1874.

Position of Lighthouse, Lat. 33° 28′ N., Long. 135° 52′ E. Height of Lantern, 130 feet.

Barometer reduced to Sea-level and 32°.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from										
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·361	1·25	48·2	2·40	4	5	2	0	0	0	0	3	19	2	1	0
February -	30·345	0·88	49·0	1·60	5	5	1	1	0	0	0	3	11	7	1	0
March -	30·186	1·25	55·1	6·12	8	7	3	1	1	1	1	2	6	9	1	1
April -	30·058	0·85	64·7	6·13	7	2	6	3	1	1	2	7	5	3	2	1
May -	29·845	1·05	70.8	7·46	8	4	8	4	2	1	1	4	2	5	2	0
June -	29·655	0·68	77·3	6·62	10	3	4	5	2	2	4	4	1	5	2	1
July -	29·428	0·65	84·1	6·03	7	1	5	2	2	2	4	7	1	7	2	0
August -	29·388	0·85	84·8	7·34	13	1	2	4	2	5	6	6	1	4	2	0
September -	29·621	0·83	80·0	11·76	8	3	10	4	1	1	1	2	3	5	1	0
October -	29·907	1·21	72·5	10·03	9	9	8	3	0	0	1	2	7	1	1	0
November -	30·200	1·00	61·0	2·86	4	5	2	1	0	1	1	4	16	0	1	0
December -	30·372	1·02	54·0	3·08	4	4	1	1	0	0	2	3	19	1	0	0
Means and totals	29·947	—	66·8	71·43	77	49	52	29	11	14	23	47	91	49	16	3

JAPAN.—South-East Coast.

Siwo Misaki Lighthouse.

Meteorological Table compiled from Observations made between 1st January 1871 and the 31st December 1874.

Position of Lighthouse, Lat. 33° 26′ N., Long., 135° 46′ E. Height of Lantern, 163 feet.

The Barometrical Observations are by an Aneroid reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from										
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·225	·85	45·1	1·82	4	7	3	0	0	0	0	2	17	2	0	0
February -	30·108	·73	45·0	1·63	4	3	3	0	0	0	1	1	14	6	1	0
March -	30·101	·70	51·9	4·16	7	3	6	2	0	0	0	2	10	8	1	1
April -	30·025	·60	62·6	6·51	8	0	6	3	1	1	1	6	3	9	1	1
May -	29·904	·75	68·8	5·91	8	0	9	7	0	0	1	5	3	6	0	0
June -	29·899	·44	77·2	6·01	9	1	9	6	1	0	3	6	1	3	0	2
July -	29·866	·82	84·5	5·14	6	0	8	4	0	0	1	12	1	5	1	1
August -	29·867	·70	84·9	6·92	8	1	4	4	1	2	3	8	0	8	0	0
September -	29·922	·72	77·6	8·49	9	1	11	4	1	1	0	4	1	7	0	0
October -	30·020	·84	68·3	13·06	10	2	13	4	0	0	0	2	3	7	1	1
November -	30·128	·80	58·9	3·31	5	5	4	1	1	0	1	3	7	8	0	0
December -	30·128	·62	51·9	1·82	4	4	4	0	0	0	0	7	9	7	0	0
Means and totals	30·016	—	64·7	64·78	82	27	80	35	5	4	11	58	69	76	5	6

JAPAN.—South-West Coast.

Saton Misaki Lighthouse.

Meteorological Tables compiled from Observations made between 1st January 1871 and 31st December 1874.

Position of Lighthouse, Lat. 30° 58′ N., Long. 130° 40′ E. Height of Lantern, 200 feet.
Barometer reduced to Sea-level and 32°.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·338	0·87	50·5	1·87	8	12	2	2	0	1	0	2	11	1	1	1
February -	30·328	0·69	50·7	3·02	7	7	2	4	0	0	0	2	12	1	1	0
March -	30·258	0·73	56·7	5·01	8	3	4	5	1	0	1	2	11	4	1	1
April -	30·181	0·52	65·2	4·22	5	3	2	7	2	1	1	4	6	4	1	1
May -	30·045	0·57	70·3	4·67	8	1	3	12	2	1	0	3	6	3	1	1
June -	29·994	0·42	76·5	6·10	8	1	3	11	2	1	1	3	4	4	1	0
July -	29·938	0·77	82·5	0·99	6	2	4	9	1	1	2	6	5	1	1	0
August -	29·920	1·00	82·5	8·99	9	2	2	8	2	1	4	6	3	3	1	0
September -	30·014	0·66	75·4	8·38	10	4	6	12	1	0	1	0	2	4	0	0
October -	30·148	0·96	72·2	4·26	8	6	4	10	1	1	0	1	6	2	1	0
November -	30·289	0·53	62·5	2·24	4	11	2	3	1	0	0	2	10	1	0	0
December -	30·299	0·59	58·0	2·37	7	6	2	5	0	1	1	3	12	1	0	0
Means and totals	30·146	—	66·9	52·12	88	58	36	88	13	8	11	34	88	29	9	4

JAPAN.—South-West Coast.

Nagasaki Lighthouse.

Meteorological Table compiled from Observations made between the 1st January 1871 and the 31st December 1874.

Position of Lighthouse, Lat. 32° 43′ N., Long. 129° 46′ E. Height of Lantern, 205 Feet.
Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·286	1·14	47·5	1·00	11	9	9	2	0	0	0	1	7	3	2	1
February -	30·273	0·81	48·7	0·99	11	8	8	2	0	1	0	0	7	2	1	0
March -	30·265	0·64	55·7	2·85	9	6	8	4	1	1	1	1	4	5	1	3
April -	30·146	0·62	64·7	2·75	9	5	3	4	2	3	1	3	4	5	0	4
May -	30·038	0·65	73·3	4·03	7	3	3	7	1	1	1	2	4	9	1	4
June -	29·965	0·40	79·3	4·95	9	4	2	5	1	6	2	2	2	6	1	2
July -	29·923	0·76	86·6	3·24	6	1	1	2	2	5	8	1	2	9	1	2
August -	29·926	0·94	85·7	10·76	10	1	1	7	2	3	6	2	1	8	1	2
September -	30·047	0·50	80·6	4·86	9	2	12	5	2	1	1	1	1	5	0	0
October -	30·277	0·68	72·3	2·09	5	8	12	3	0	0	0	1	2	5	1	1
November -	30·385	0·58	61·2	1·04	5	4	8	4	1	1	0	3	7	2	0	0
December -	30·390	0·50	54·5	2·08	10	4	11	4	0	1	1	1	8	1	2	1
Means and totals	30·160	—	67·5	40·64	101	55	78	49	12	23	21	18	49	60	11	20

JAPAN.—South-West Coast.

Rokuren Lighthouse.

Meteorological Table compiled from Observations made between 1st January 1872 and 31st July 1873. (The Barometer for the year 1872 alone.)

Position of Lighthouse, Lat. 33° 59′ N., Long. 130° 52′ E. Height, 89 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.	in shade.	Total Fall.	No. of Days.	No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·243	0·62	42·6	1·25	15	6	2	1	2	3	0	4	6	7	4	0
February -	30·215	0·58	42·8	0·25	13	2	1	4	4	1	0	1	8	7	0	0
March -	30·169	0·54	48·0	0·50	9	2	3	2	4	4	2	0	8	6	0	0
April -	30·032	0·62	59·3	1·00	11	1	1	7	6	3	0	0	3	9	0	1
May -	29·865	0·48	66·4	0·10	4	4	2	5	9	3	0	0	2	6	1	0
June -	29·870	0·39	71·5	3·75	4	4	3	8	4	1	1	1	1	7	1	0
July -	29·716	0·38	81·8	7·25	7	2	0	4	8	6	1	2	3	5	1	0
August -	29·678	0·47	76·0	—	5	3	2	5	1	3	0	1	1	15	0	0
September -	29·918	0·40	72·0	—	9	7	4	9	1	1	0	0	0	8	0	0
October -	30·066	0·46	68·5	—	5	7	3	10	3	2	1	1	0	4	3	0
November -	30·239	0·72	57·5	—	5	10	1	2	6	8	0	0	2	1	0	1
December -	30·104	0·46	52·5	—	2	10	5	1	5	3	2	0	2	3	0	0
Means and totals	30·009	—	61·6	—	89	58	27	58	53	38	7	10	36	78	10	2

JAPAN.—South-West Coast.

Isaki Lighthouse.

Meteorological Table compiled from Observations made between 2nd March 1872 and the 31st December 1874. (The following months missing :—August, September, October, November, and December, 1873 ; January, February, and March, 1874.)

Position of Lighthouse, Lat. 33° 58′ N., Long. 131° 1′ E. Height of Lantern, 122 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp.	Rain.		Wind.									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.	in shade.	Total Fall.	No. of Days.	No of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·245	1·22	43·0	3·25	17	9	3	1	7	0	0	2	4	5	1	0
February -	30·201	0·46	43·6	0·95	9	1	2	3	5	0	0	12	2	3	0	0
March -	30·177	0·67	49·0	1·55	7	4	0	6	7	1	1	7	5	0	1	0
April -	30·049	0·69	59·5	3·67	8	3	0	4	7	0	1	8	1	6	3	1
May -	29·907	0·91	67·2	5·85	6	3	0	12	4	0	0	5	2	5	3	0
June -	29·814	0·54	74·6	9·60	7	5	0	8	6	0	0	5	0	6	1	0
July -	29·743	0·48	82·2	6·18	8	2	0	8	8	1	0	8	0	4	2	0
August -	29·683	0·95	81·2	10·27	9	3	1	8	5	1	0	3	5	5	3	0
September -	29·928	0·66	75·2	6·75	6	7	1	4	9	0	0	5	1	3	1	0
October -	30·126	0·74	66·6	3·20	7	8	2	3	3	0	0	6	3	6	0	0
November -	30·294	0·78	55·0	0·80	2	9	1	3	4	0	0	6	4	3	1	0
December -	30·282	0·91	49·4	2·20	6	9	1	2	5	0	1	9	1	3	1	0
Means and totals	30·037	—	62·2	54·27	92	63	11	62	70	3	3	76	28	49	17	1

JAPAN.—Inland Sea.

Isumi Lighthouse.

Meteorological Table compiled from Observations between the 1st August 1872 and the 31st July 1874.
Position of Lighthouse, Lat. 34° 17′ N., Long. 135° 0′ E. Height of Lantern, 208 feet.
Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind. No. of Days from									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January	30·193	1·09	42·7	1·71	7	10	2	1	0	1	0	8	5	4	0	0
February -	30·163	0·64	42·5	1·34	5	12	1	1	1	1	1	7	3	1	1	0
March -	30·175	0·76	45·6	3·09	8	13	1	1	0	1	2	3	7	3	1	1
April -	30·080	0·62	55·5	2·34	6	5	1	0	2	7	1	3	2	9	1	0
May -	29·950	0·73	62·5	5·05	9	5	2	0	1	9	1	4	2	7	1	1
June -	29·852	0·50	70·3	3·88	8	4	1	0	0	14	0	3	1	7	1	0
July -	29·830	0·32	77·4	4·84	6	2	2	0	0	17	1	4	1	4	1	1
August -	29·757	0·71	78·6	9·30	11	5	0	1	2	15	1	2	2	3	3	0
September -	29·877	0·65	73·5	4·25	11	13	4	1	1	6	0	1	1	3	1	0
October -	30·064	0·93	64·2	7·96	10	14	4	2	1	2	1	0	1	6	1	0
November -	30·179	0·68	56·2	2·35	4	7	4	1	1	2	0	6	3	6	0	0
December -	30·180	0·52	49·4	1·50	5	7	4	1	1	1	0	4	8	5	1	0
Means and totals	30·025	—	59·9	47·61	90	97	26	9	10	76	8	45	36	58	12	3

JAPAN.—Inland Sea.

Awadji Lighthouse.

Meteorological Table compiled from Observations made between 1st August 1871 and the 31st July 1874.
Position of Lighthouse, Lat. 34° 37′ N., Long. 135° 0′ E. Height of Lantern, 158 feet.
Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind. No. of Days from									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°	ins.												
January -	30·292	1·00	37·8	0·86	3	2	2	4	0	0	0	4	17	2	0	0
February -	30·368	0·56	37·3	0·89	4	5	2	2	1	0	0	8	9	1	0	0
March -	30·309	0·61	43·9	2·33	7	2	4	5	2	1	1	11	5	0	0	2
April -	30·231	0·53	54·7	3·64	8	3	0	4	5	3	2	9	4	0	0	1
May -	30·151	0·85	61·4	3·83	6	1	4	9	5	1	5	6	0	0	1	1
June -	30·078	0·43	70·6	3·41	8	1	1	6	6	5	3	8	0	0	0	0
July -	30·053	0·47	78·5	3·58	7	0	0	8	6	5	5	5	0	2	0	1
August -	30·033	0·60	79·6	5·79	6	1	2	7	6	3	4	8	0	0	0	1
September -	30·125	0·56	72·7	4·12	8	3	3	9	4	1	3	6	1	0	0	0
October -	30·221	0·76	63·8	6·52	7	4	4	11	2	0	0	4	5	1	1	0
November -	30·332	0·68	51·9	2·24	4	6	1	4	1	0	0	7	10	1	0	0
December -	30·353	0·66	43·6	0·92	3	3	1	4	2	0	0	6	14	1	0	0
Means and totals	30·212	—	58·0	38·13	71	31	24	73	40	19	23	82	65	8	2	6

JAPAN.—Inland Sea.

Nabe Sima Lighthouse.

Meteorological Table compiled from Observations made between the 1st January 1873 and the 30th April 1874. (No return made for November 1873.)

Position of Lighthouse, Lat. 34° 23′ N., Long. 133° 49′ E. Height of Lantern, 85 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer. Mean Height. in.	Barometer. Ext. Range. in.	Mean Temp. in shade.	Rain. Total Fall.	Rain. No. of Days.	Wind. No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	No. of Days Gales.	No. of Days Fogs.
			°	ins.												
January -	30·068	0·95	41·8	1·15	6	6	1	2	1	1	0	11	7	2	1	0
February -	30·129	0·59	42·8	0·65	5	6	2	3	0	1	1	8	4	3	1	0
March -	30·046	0·64	45·6	3·20	7	6	6	5	0	0	0	4	5	5	0	1
April -	29·960	0·56	57·0	1·30	4	1	7	5	0	1	3	7	3	3	0	1
May -	29·854	0·37	66·5	0·15	1	0	14	4	2	0	1	2	0	8	0	0
June -	29·736	0·43	73·1	1·55	3	0	3	14	1	1	0	2	0	9	1	0
July -	29·791	0·28	81·6	3·22	7	0	2	8	1	1	5	5	0	9	0	0
August -	29·791	0·66	82·2	4·95	4	0	2	9	0	1	4	3	1	11	1	0
September -	29·828	0·52	76·3	2·40	4	1	5	13	1	0	0	1	1	8	0	0
October -	29·987	0·75	64·9	3·07	5	3	4	7	3	0	2	6	3	3	1	0
November -	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
December -	30·095	0·49	47·8	0·45	7	0	4	2	1	0	1	1	6	16	0	0
Means and totals	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

JAPAN.—Inland Sea.

Isauri Sima Lighthouse.

Meteorological Table compiled from Observations made between 1st July 1873 and 30th June 1874.

Position of Lighthouse, Lat. 33° 53′ N., Long. 132° 38′ E. Height of Lantern, 286 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer. Mean Height. in.	Barometer. Ext. Range. in.	Mean Temp. in shade.	Rain. Total Fall.	Rain. No. of Days.	Wind. No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	No. of Days Gales.	No. of Days Fogs.
			°	ins.												
January -	30·447	0·60	45·0	0·15	6	3	8	2	0	1	4	9	1	3	0	0
February -	30·398	0·87	46·9	0·60	2	9	7	2	1	2	3	2	1	1	0	0
March -	30·346	0·65	47·7	2·58	9	4	22	1	0	1	1	2	0	0	0	2
April -	30·220	0·57	59·2	0·70	2	1	11	0	0	8	9	0	1	0	0	0
May -	30·076	0·84	65·7	3·30	9	2	15	1	0	2	4	1	2	4	0	1
June -	30·038	0·47	76·1	6·40	3	1	10	1	1	6	7	1	1	2	0	4
July -	29·877	0·35	85·7	2·07	7	0	6	0	0	10	1	1	1	12	0	0
August -	29·887	0·68	85·6	4·28	10	3	6	0	0	9	3	0	0	10	0	1
September -	29·940	0·43	78·5	1·85	7	4	12	0	0	2	0	2	2	8	0	0
October -	30·186	1·07	67·1	3·47	9	2	15	1	0	2	2	3	0	6	2	0
November -	30·497	0·69	59·8	1·26	6	2	4	0	0	2	7	10	0	5	0	2
December -	30·397	0·53	51·0	0·80	8	1	8	0	4	3	7	3	1	4	0	0
Means and totals	30·192	—	64·0	28·16	78	32	124	8	6	48	48	34	10	55	2	10

JAPAN.—Gulf of Yedo.

Treaty Point Light-vessel, Yokohama.

Meteorological Table compiled from Observations made between the 1st January 1871 and the 31st December 1874.

No Observations for Rainfall were made on board the Light-vessel. Those recorded are from the results of the French Observers at Yokohama for nine years.

Barometer reduced to 32° and Sea-level.

Month.	Barometer. Mean Height. in.	Barometer. Ext. Range. in.	Mean Temp. in shade.	Rain. Total Fall.	Rain. No. of Days.	Wind. No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	No. of Days Gales.	No. of Days Fogs.
			°	ins.												
January	30·098	·87	41·2	2·29	7	17	3	0	0	1	2	0	1	7	0	0
February	30·124	·89	42·1	2·26	7	20	2	0	0	0	0	1	5	0	0	0
March	30·077	1·23	49·1	6·75	10	13	6	1	2	1	1	0	0	7	1	2
April	29·971	·94	58·1	7·23	10	8	6	1	0	5	2	1	0	7	1	1
May	29·837	1·08	65·9	6·24	9	5	5	2	1	7	3	0	0	8	1	2
June	29·796	·66	70·8	11·62	13	5	6	3	0	6	4	0	0	6	1	1
July	29·707	·80	78·2	7·78	11	1	4	1	2	5	8	0	0	10	1	1
August	29·673	1·60	80·6	9·43	11	2	4	1	1	7	8	0	0	8	1	0
September	29·798	·67	72·8	10·56	13	11	6	2	0	1	4	0	1	5	1	0
October	29·882	1·40	65·1	13·03	12	18	5	0	0	1	2	0	0	5	0	1
November	30·064	1·12	56·0	5·59	8	13	3	2	0	1	2	1	1	7	1	0
December	30·007	1·37	46·8	2·49	6	16	4	0	0	0	0	1	2	8	0	0
Means and totals	29·919	—	60·6	85·27	117	129	54	13	6	35	36	3	6	83	8	8

JAPAN.—Gulf of Yedo.

Yedo.

Meteorological Table compiled from Observations made between the 1st October 1872 and the 30th September 1874.

Position of Observation Station, Lat. 35° 41′ N., Long. 139° 47′ E. Height, about 22 feet.

Barometer reduced to 32° and Sea-level.

Month.	Barometer. Mean Height. in.	Barometer. Ext. Range. in.	Mean Temp. in shade.	Max. Temp. in shade registered.	Min. Temp. in shade registered.	Rain. Total Fall.	Rain. No. of Days.	Wind. No. of Days from N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	Tension of Aqueous Vapours.	Relative Humidity.
			°	°	°	ins.												
January	30·075	1·27	36·8	53·6	19·0	2·40	No information.	11	4	1	1	0	1	1	1	11	·135	66·6
February	30·058	·82	38·0	58·8	21·0	2·07		10	4	1	0	1	1	0	1	10	·146	63·7
March	30·042	1·04	43·8	71·2	19·8	5·21		12	2	1	1	3	2	0	4	6	·198	68·6
April	30·027	·98	55·1	75·0	33·8	4·18		4	4	3	1	5	5	1	0	7	·311	70·4
May	29·965	·97	62·3	82·4	40·1	4·25		4	4	2	2	9	3	0	1	6	·438	75·8
June	29·927	·68	69·2	90·3	54·0	10·52		2	3	3	4	6	5	1	0	6	·591	82·4
July	29·898	·82	76·3	89	59·4	4·18		1	3	2	2	10	4	1	1	7	·749	82·6
August	29·931	·66	79·2	92·1	61·2	5·78		1	1	1	2	10	8	1	1	6	·800	80·6
September	29·955	1·52	70·3	84·9	57·2	14·21		7	5	2	1	3	4	1	1	6	·636	85·2
October	30·089	1·13	60·1	75·0	39·4	9·17		9	6	2	1	1	2	1	3	6	·433	82·3
November	30·123	1·09	48·7	68·7	30·2	5·68		10	5	1	1	1	1	1	1	9	·262	75·0
December	30·108	·96	41·9	64	23·4	2·27		11	5	1	0	0	2	1	3	8	·185	69·8
Means and totals	29·954	—	56·9	92·1	19·0	69·92	—	82	46	20	16	49	38	9	17	88	—	—

JAPAN.—Yesso Island.

Hakodati Lightship.

Meteorological Table compiled from Observations made between the 1st May 1873 and the 31st December 1874.

Barometer reduced to 32° and Sea-level.

Month.	Barometer.		Mean Temp. in shade.	Rain.		Wind. No. of Days from									No. of Days Gales.	No. of Days Fogs.
	Mean Height. in.	Ext. Range. in.		Total Fall.	No. of Days.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm		
			°													
January -	29·986	·75	30·2	No information.	5	4	0	3	0	1	3	8	11	1	0	0
February -	29·977	1·04	33·5		5	1	0	1	4	0	6	12	4	0	0	0
March -	30·003	·79	34·9		9	4	0	0	5	1	11	7	3	0	0	0
April -	29·798	·80	44·1		6	2	0	0	4	10	7	3	2	2	0	0
May -	29·827	·83	55·1		4	2	1	4	8	3	7	3	1	2	0	1
June -	29·789	·76	62·7		9	2	1	6	4	1	9	1	1	5	0	2
July -	29·766	·56	68·9		4	1	0	7	4	3	12	1	0	3	0	3
August -	29·777	·51	74·3		10	1	1	3	9	3	10	3	0	1	0	0
September -	29·820	·87	68·5		7	6	1	2	4	2	5	2	5	3	1	0
October -	29·934	1·06	57·1		4	5	0	2	1	2	4	8	7	2	1	0
November -	29·863	1·08	45·9		15	6	3	0	1	2	2	6	6	4	0	1
December -	29·960	1·08	36·5		13	6	1	1	2	0	1	5	11	4	0	0
Means and totals	29·875	—	50·9	—	91	40	8	29	46	28	77	59	51	27	2	7

From the mean monthly results given in the foregoing tables, diagrams have been constructed showing the yearly curves. From them it will be readily seen that although the curves on the south-east coast agree well with each other, they differ considerably from those of the south-west coast, which also agree with each other, and that they both differ from the curves of the Inland Sea.

The registers kept on the south-east coast, extending as they do over a period of four years without a break, and giving the same, or nearly the same results, are the most valuable.

It will be noticed that in the tables, the barometer at Siwo Misaki lighthouse differs considerably from the results obtained at the other lighthouses on this coast. This is doubtless owing to the instrument at Siwo Misaki being an aneroid, and not a mercurial barometer, and so it has been omitted from the curves, although I have not thought it right to omit it in the table. The temperature curves agree remarkably well, and the rain curves fairly well. See Diagram I.

On the south-west coast the most important registers are those at Saton Misaki and Nagasaki as they extend, also without a break, over four years, and the results at these two positions agree closely. The registers at Rokuren and Isaki only extend over a little more than a year, and there is only a register of the rainfall for six months at

Rokuren. The curves, however, agree very well, considering the short time the observations have been recorded. See Diagram II.

The results in the Inland Sea, especially the mean barometric curves, do not agree so well, neither do the observations extend over so long a period as they do on the south-east and south-west coasts. The cause of the barometric curves differing so much from each other is probably due to an error in the barometers at Awadji and Isauri Sima, as all the curves follow the same, or nearly the same angles, only differing in height.

A reference to the tables will show that the mean yearly pressure at Isaki is 30·037 inches, at Rokuren 30·009 inches, at Nabe Sima about 29·952 inches, and at Isami 30·025 inches, whilst at Awadji lighthouse it is 30·212 and at Isauri Sima 30·192. As these two lighthouses occupy positions *between* the lighthouses first mentioned it is highly improbable that their mean yearly pressure should be 0·20 of an inch higher than that of the lighthouses between and on each side of them, it is much more likely that the zero of the scales of their barometers is incorrectly adjusted to the cistern, and that they therefore both register 0·2 of an inch above the correct reading and consequently that that amount must be deducted from the results given in the table to obtain the true pressure.

If that amount be deducted it will be seen that the curves agree closely; see Diagram III.

In dealing with the results of the lightship at Yokohama and with those of Mr. Knipping at Yedo some little difficulty was experienced.

The barometer at Yedo is a syphon graduated in the usual manner so that the difference of the height of the two columns gives the pressure, and this is no doubt correctly and carefully observed by Mr. Knipping. His results, however, show a very small range of mean pressure compared with that observed in every other part of Japan.

The barometer in the lightship at Treaty Point, Yokohama, has evidently been much in error up to October 1873, in which month it appears to have been changed, although there is no record of the event in the register. For instance, the mean yearly pressure shown by it in 1871 was 29·73 inches, whilst the mean pressure for the same year at Sagami lighthouse was 29·86 inches. In 1872 the mean pressure, given apparently by the same barometer, at the lightship was 29·56, whilst at Sagami it was 29·88. In 1873 the mean pressure at the light-vessel was 29·62, at Sagami 29·86, and at Yedo 29·95, and in this year the barometer appears to have been changed (in October) otherwise the pressure would have been nearly the same as in 1872, viz., 29·56. In 1874, so far as can be judged from the register for 9 months with the new barometer, the mean pressure for the year would be between that at Sagami and Yedo.

In constructing the table for Yokohama I have had to take into consideration these results and to endeavour to find the error of the barometers in the lightship, which I have done in the following manner.

The mean yearly pressure at Sagami is 29·887 and at Yedo 29·954. Yokohama is about midway between these two places and we may therefore fairly assume that the mean yearly pressure there will be midway between the yearly pressures at Sagami and Yedo, *i.e.*, 29·92 inches, and this I have assumed as the true mean pressure for the lightship.

In forming the tables I have taken the difference between the true mean pressure and the pressure given for the year as the error of the barometer, and have allowed this difference to each of the monthly means. By this method the monthly means for each year were found to accord well with each other and the mean of the four years thus corrected is given in the table for the lightship.

As no register of the rainfall was kept on board the light vessel, I have combined with the Yokohama results the rainfall at Yokoski, 9 miles south of Yokohama, at which place a register has been kept by the French for 9 years.

Comparing the results thus obtained at Yokohama with those at Sagami lighthouse at the entrance of Yedo Gulf, and with those of Mr. Knipping at Yedo, it will be seen the mean barometric curve at Yokohama occupies a middle position between the curves at Sagami and Yedo, proving in fact that the low pressure which is formed on the south-east coast of Nipon island in the summer months is entirely confined to the coast, and does not extend any distance inland.

The mean temperature curves are nearly identical during the summer months, but in the winter months Yedo is colder than Sagami, and Yokohama occupies a middle position. This is probably owing to the prevailing northerly wind in winter preventing the Japan stream penetrating to the head of the Gulf of Yedo; at any rate the temperature of the water at Yokohama is colder than that outside the gulf during the spring, as on the "Challenger's" arrival in April 1875 the temperature of the surface water outside the gulf was from 62° to 66° but at Yokohama it was 55°. In May it was 68° outside the gulf and 60° at Yokohama, and in the early part of June 70° outside and 64° at Yokohama, but when we left on the 16th June it was 68° at Yokohama and 72° outside the gulf.

The rainfall follows the same curves at Sagami, Yokooka, and Yedo, but there appears to be a much greater fall at the two latter places than at Sagami. See Diagram IV.

From the tables of results a plan has also been constructed showing the isobaric lines and prevalent winds for each month of the year. In this plan ·2 of an inch has been subtracted from the barometric results of Isauri Sima and Awadji lighthouses, that being apparently the error of the barometers at those stations as explained in the preceding pages. (See Plan.)

From this plan, combined with the tables, the account of the winds in the China Sea Directory, Vol. IV., Commodore Perry's narrative of the American expedition to Japan, the journals of Commander Maclean, who was a lieutenant in H.M.S. "Princess Royal," and of Lieutenant Carpenter, late of H.M.S. "Iron Duke," the following account of the weather in the southern part of the Japanese islands has been drawn up.

In December, January, and February, the mean pressure varies from 30·10 to 30·30, the lowest isobar in these months being farthest inland, whilst the highest follows the line of the coast. The prevailing winds are northerly and westerly, but are liable to be diverted from their course by high land or straits, and when so diverted or confined blow with some violence. Little or no rain falls. Gales from the westward and south-westward are sometimes experienced on the S.E. coast off the Gulf of Yedo and between it and the Kii Channel, H.M.S. "Princess Royal" being in one for five days in December which prevented her making any westing until she got as far south as the parallel of 30° N., and H.M.S. "Swallow" having experienced a short sharp one that lasted 10 hours in February.

These breezes do not, however, appear to extend far inland, as during these months the weather in the Inland Sea and at Yokohama is described as being fine, bright, and clear in Captain Maclean's journal.

In March, April, and May the pressure is more evenly distributed than at any other period of the year, excepting the month of November, and this equality of pressure extends to Hakodate. The weather during these months is, as might be expected, very fine, the prevailing winds being northerly and easterly. During our stay in the "Challenger," on the south-east coast of Japan, from the 11th April to 16th June 1875, the barometer and direction of the wind coincided in a remarkable manner. Always with a high barometer we had fine weather with light winds, which, after a time, settled from the south. This light south wind then lasted until the barometer began to fall, generally from 12 to 36 hours; but directly the pressure increased the wind freshened, from the same quarter, clouds began to accumulate, and in a few hours it was blowing a moderate gale with rainy weather; this lasted until the barometer ceased falling, from 12 to 24 hours. Shortly after it reached its minimum height, about 29–50, the wind suddenly shifted to the N.Wd. or northward, and fell light, and the clouds cleared off as if a curtain had been withdrawn from the sky. In an hour or so after the sky had cleared the wind freshened from the Nd. or N.Wd., sometimes it backed to the westward and then blew quite fresh, force 6 to 7. From this time the barometer rose slowly, the wind gradually decreasing as it rose, until it reached its maximum, when the wind again veered to the southward. At Yokohama the remarkable clearing off of the clouds directly the wind shifted was not so apparent as outside, owing to the high ranges of Fusiyama and Oyama forming an obstacle to the wind and a lie for the clouds.

Rain may be expected in moderate quantities during these months.

In June, July, August, and September, there is great variation of pressure over the southern portion of Japan more especially on the south-east coast, where the isobars are packed close together and make a very steep gradient. The cause of this is probably due to the Kuro Siwo or Japan stream which in the height of summer reaches the temperature of 86° and which must therefore be constantly giving off heat and vapour, causing an ascending current to take place. This vapour is condensed after reaching a certain height, and precipitated over the adjacent coasts, when a copious rainfall is recorded at this season of the year. Owing to this great inequality of pressure storms are frequent. In the China Sea Directory, vol. IV., pp. 12, it is stated that "August brings unsettled weather with short gales from various quarters, "squalls, rain, and frequent calms." At p. 15 that "during the spring and summer "months in the Gulf of Yedo very violent and sudden squalls from the north come "on frequently without any warning, from almost a calm or perhaps a light air from "the S.Wd. Vessels passing between Yokohama and Hakodate report having experienced the same at this season, and have met with loss of spars and sails in "consequence." In the same page Captain Bullock, R.N., is quoted to the effect "In the latter part of July fogs were only experienced between lat. 36 N. and 37 N. "fine weather with land and sea breezes prevailing. Northward of 38 N. stiff breezes "from west lasted a few hours." (Captain Bullock is speaking of the east coast of Nipon.) He goes on to say "On the south-east coast the weather appeared to be "quite different. The fogs became modified when in contiguity with the warm "water of the Japan stream, and formed into detached banks or clouds, which hung "over sea and land obscuring the hills almost to their bases. A strong S.W. wind "may also be met with when a light east wind or calm is prevailing on the east "coast."

In August and September 1871 no less than 16 gales are registered in the return from Rock Island lighthouse.

The American Squadron under Commodore Perry experienced a heavy gale in July off Yedo and in this month in 1874, H.M.S. "Iron Duke" also encountered a heavy gale between Yedo and the Kü channel. In August and September 1858 H.M.S. "Furious" reported "frequent heavy gales from E.N.E. through south to south-west." H.M.S. "Princess Royal" experienced a heavy gale in August off Vries island which blew a close-reefed maintop-sail out of the bolt rope, and H.M.S. "Iron Duke" in the same month had a heavy gale off Mela Head.

The prevalent wind during these months is southerly. Typhoons may be experienced as they pass out of the China Sea into the Pacific, but they generally travel to the southward of Japan.

In October the wind again has changed to the northward, the pressure increases, and becomes more equal, and consequently fewer gales are reported, and the weather is finer, much rain however falls on the S.E. coast.

In November the pressure is nearly equalised and the weather is fine, the rain moderate, and the prevailing wind north-easterly and easterly.

In conclusion, I have to point out that the mean yearly pressure at Nagasaki the table here given (30·160), differs considerably from that given by Professor Dove (29·983) but that the fluctuation given by him agrees, closely with ours.

Professor Dove's results are based upon observations made by the Dutch at Decima between 1845 and 1855.

As I have not seen these observations, I am not aware of their precise value. If their barometer was compared periodically with a standard and its error accurately known, it is extremely probable that the instrument now in use at the lighthouse, has an index correction of −·177, but unless these precautions were taken it is more likely that the instrument in use by the Dutch had an index correction of +·177 as the Nagasaki lighthouse results agree so well with those at Saton Misaki lighthouse.

It is to be regretted that the exact height of the cisterns of the barometers in use at the different lighthouses has not been ascertained, and that they have never been compared with a standard. Until this is done the deductions made from the observations are necessarily imperfect.

Mr. Brunton, the superintendent of lighthouses and buoys, has now a steamer under his orders, for the purpose of periodically visiting the different stations, and doubtless he will take an early opportunity of ascertaining these facts thus rendering the meteorological work organised by him of increased value.

Professor Dove also gives in his work the mean yearly pressure at Hakodate as 29·887, which agrees fairly well with that obtained from the observations at the light-vessel 29·875. The authority for the value given by Professor Dove is a paper by Hofrath Albrecht printed in the Correspondance Météorologique (St. Petersburg) for 1857 (published 1860). The observations refer to the single year 1859.

T. H. Tizard,
Staff Commander.

H.M.S. "Challenger," July 1875.

Approved,
Frank T. Thomson, Captain.

APPENDIX.

Inasmuch as Admiral FitzRoy had undertaken the collection and discussion of all the materials in his Office for the Pacific, including the China Seas, and as most of this information has remained unpublished since his death, it has been deemed desirable to print that portion of it which refers to the immediate vicinity of Japan, as an Appendix to Staff-Commander Tizard's Paper.

The tables are arranged so as to show the information existing for the several months, in five-degree squares. The number of observations is given in each case. The reader must bear in mind that the column headed "Total Observations" of weather is the number of eight-hourly periods for which the weather was noted, and that several of the facts recorded may have existed during one of these periods; for instance, "*b*," "*m*," "*c*," and "*q*" may have been entered for one, so that the sum of all entries will, in general, much exceed the number of eight-hourly periods.

The state of the weather has been indicated according to Beaufort's Notation, of which the following entries alone are employed in the tables:

b Blue sky.
c Clouds (detached).
f Foggy.
h Hail.
e Lightning.
m Misty (hazy).
o Overcast.
q Squally.
r Rain.
s Snow.

The column headed "Remarks" contains a notice of the number of gales observed in each month.

NOTES.

The highest barometer reading was, in February, 30·697 inches, wind N.N.W., force 2, at Shanghae. In November, 30·625 was recorded, with wind N.N.W., force 2, in latitude 30° to 35° N., long. 120° to 125° E.; in January, 30·576, wind N.N.W., force 4, in lat. 35° to 40° N., long. 120 to 125 E.; in October, 30·421, wind N., force 1, in lat. 35° to 40° N., long. 135° to 140° E.

The lowest barometer reading was, in September, 28·870 inches, wind E. to N. and W., force 12, in lat. 30° to 35° N., long. 120° to 125° E. In July, 29·353 was recorded, with wind N.W., force 7, at Shanghae; in June, 29·387, wind N.E., force 7, lltr, in lat. 35° to 40° N., long. 120° to 125° E.; in May, 29·474, wind S.W., 2, to N.E., 6, in lat. 30° to 35° N., long. 125° to 130° E.; in January, 29·471, wind N., force 2, in lat. 35° to 40° N., long. 135° to 140° E.

In lat. 29° 35′ N., long. 127° 50′ E., in February, a rise of 20° in the temperature of the sea was observed during the night, and the current changed from N.W. to S.E.

RESULTS of OBSERVATIONS made in the SEAS of CHINA and JAPAN deduced from REGISTER kept for the METEOROLOGICAL OFFICE.

Position. Latitude, N.	Position. Longitude, E.	Month.	No. of Years Observations.	Barometer. Average Ins.	Barometer. No. of Observations.	Temp. of Air. Average.	Temp. of Air. No. of Observations.	Cloud. Average amount (0 to 10).	Cloud. No. of Observations.	Weather. Total Observations.	b.	c.	o.	m.	f.	r. & h.	s.	q.	t. & l.	Temp. of Sea. Average.	Temp. of Sea. No. of Observations.	Remarks.
						°																
North coast of Shangtung		Jan.	1	30·406	93	28·1	92	4·8	93	93	39	28	26	3	–	–	4	18	–	36·8	31	Force 8 once, from N.N.E.
35 to 40 -	120 to 125	„	1	30·521	6	26·2	6	5·2	6	6	2	3	1	2	–	–	3	3	–	—	–	Force 8 once, in a N.N.W. squall.
Chiefly at Shanghae		„	4	30·365	261	39·2	253	5·6	93	261	48	98	114	9	4	45	7	20	–	42·5	35	Force 8 twice, from N.N.W., N.E.
30 to 35 -	120 to 125	„	5	30·246	46	44·1	39	6·0	42	47	12	13	15	4	12	11	1	8	–	48·6	7	Force 8 four times from N., N.N.W., N.W., E.N.E.
S.E. coast of Korea Strait -		„	1	30·213	45	46·0	45	5·1	45	45	14	21	10	2	–	10	5	11	–	54·6	15	
30 to 35 -	125 to 130	„	2	30·191	21	48·3	21	6·4	21	21	3	10	8	1	–	–	–	9	–	59·8	4	
Chiefly at Yokohama		„	1	30·019	18	38·7	18	5·3	18	18	5	7	6	–	–	2	–	–	–	47·2	6	
35 to 40 -	135 to 140	„	1	29·958	3	37·3	3	5·7	3	3	1	1	1	–	–	–	–	–	–	46·0	1	
30 to 35 -	130 to 135	„	2	30·014	9	57·9	9	7·0	9	9	–	6	3	–	–	3	–	4	–	69·5	3	
30 to 35 -	135 to 140	„	2	30·192	6	48·7	6	5·0	6	6	1	4	1	–	–	1	–	2	–	67·0	1	Force 8 once, from N.N.W.
S. coast of Lian Tung		Feb.	1	30·114	22	29·3	22	5·0	4	21	5	8	6	1	1	1	–	3	–	33·1	7	
N. coast of Shangtung		„	1	30·448	84	29·9	84	4·0	84	84	42	17	25	4	–	–	4	13	–	32·9	28	Force 8 twice, from N.N.E.
35 to 40 -	120 to 125	„	2	30·272	14	35·6	14	6·3	6	14	3	6	5	3	–	–	–	–	–	39·1	5	
Chiefly at Shanghae		„	3	30·396	132	39·5	130	5·0	45	132	20	63	48	6	2	19	2	4	–	41·3	13	
30 to 35 -	120 to 125	„	5	30·263	73	45·4	69	4·7	64	71	21	30	16	18	1	7	–	3	–	44·3	8	Force 8 twice, in a W.S.W. gale.
30 to 35 -	125 to 130	„	2	30·152	12	48·4	9	3·8	12	12	5	6	1	7	–	–	–	–	–	60·0	1	Force 8 thrice, in a W.N.W. gale.
Chiefly at Yokohama		„	1	29·979	54	41·8	54	4·0	54	54	23	18	12	11	1	5	–	6	2	45·3	18	
35 to 40 -	135 to 140	„	1	29·779	3	44·7	3	3·0	3	3	2	1	–	–	–	–	–	1	2	49·0	1	
30 to 35 -	130 to 135	„	1	30·018	6	54·3	6	6·7	6	6	1	3	2	–	–	1	–	3	–	65·8	2	Force 8 once, from N.N.E.
30 to 35 -	135 to 140	„	1	30·064	21	52·7	21	4·6	21	21	4	15	2	1	–	1	–	10	2	65·7	7	Force 8 four times, in a gale from N.W. to W.
At mouth of Peiho -		Mar.	1	30·178	27	44·7	27	1·4	27	27	22	3	2	3	–	–	–	2	–	40·9	8	
35 to 40 -	115 to 120	„	2	30·188	21	38·6	21	3·5	15	21	8	8	5	10	–	–	–	1	4	36·0	7	
N. coast of Shangtung		„	2	30·323	130	35·2	129	3·5	56	130	40	44	45	10	2	2	6	18	–	35·5	43	Force 8 once, from N.
35 to 40 -	120 to 125	„	2	30·296	17	37·1	17	3·3	15	17	9	5	2	4	1	1	–	1	–	35·4	6	
Chiefly at Shanghae		„	1	30·236	39	46·2	39	–	–	39	2	17	20	1	–	9	–	1	–	—	–	
30 to 35 -	120 to 125	„	2	30·175	18	46·2	12	8·0	11	14	–	3	6	1	4	1	–	1	–	—	–	
N.W. coast of Korea Strait		„	1	30·052	18	49·3	18	7·1	18	18	2	7	9	1	–	4	2	12	–	54·7	6	Force 8 thrice, in a N.W. gale.
S.E. coast of Korea Strait -		„	1	30·086	30	49·9	30	4·9	30	30	9	12	9	3	–	3	–	5	–	56·6	10	
30 to 35 -	125 to 130	„	2	30·107	41	53·8	36	7·4	42	41	4	16	21	4	–	13	–	16	1	60·6	12	
30 to 35 -	130 to 135	„	1	30·001	9	62·1	9	4·3	9	9	3	5	1	–	–	1	–	2	–	64·1	3	
35 to 40 -	115 to 120	April	2	30·251	24	44·2	24	3·0	9	24	9	12	3	14	–	–	–	7	–	42·2	8	
N. coast of Shangtung		„	2	29·983	130	50·9	130	3·3	73	129	47	59	22	21	2	5	–	13	1	48·3	43	Force 8 once, from S.W.
35 to 40 -	120 to 125	„	1	29·952	20	48·1	20	4·7	20	20	8	5	7	4	–	2	–	1	–	48·3	7	
Chiefly at Shanghae		„	3	30·007	108	56·1	107	7·0	57	108	13	37	54	16	1	26	–	7	2	55·2	19	Force 8 once, from N.W.
30 to 35 -	120 to 125	„	6	30·075	46	54·5	37	5·3	42	45	18	9	15	20	1	6	–	5	3	52·1	12	
S.E. coast of Korea Strait -		„	1	29·999	30	62·0	30	7·7	30	30	2	12	16	4	–	4	–	–	–	63·2	10	
30 to 35 -	125 to 130	„	2	30·135	12	57·3	6	8·8	12	10	–	3	7	1	1	2	–	–	–	59·4	4	
S. coast of Shangtung		May	1	29·864	28	57·6	28	–	–	28	3	18	6	4	2	1	–	2	–	55·6	9	
N. coast of Shangtung		„	2	29·921	120	58·8	119	5·1	94	120	42	37	41	13	3	11	–	10	3	54·2	39	
35 to 40 -	120 to 125	„	1	29·864	20	54·7	20	–	–	20	1	12	6	1	–	4	–	5	–	51·0	7	Force 8 once, from N.E.
Chiefly at Shanghae		„	2	29·937	138	63·8	138	5·9	96	138	21	69	39	51	3	26	1	10	5	63·0	32	Force 8 twice, from E.N.E., N.W.
30 to 35 -	120 to 125	„	4	29·903	18	62·3	18	8·0	10	17	–	4	10	8	4	5	–	–	–	61·5	2	
S.E. coast of Korea Strait -		„	2	29·909	54	64·1	54	5·2	33	54	10	21	23	10	1	18	–	6	–	66·3	18	
30 to 35 -	125 to 130	„	2	29·773	18	64·6	12	9·2	12	15	–	3	12	2	–	8	–	5	–	65·5	6	
Chiefly at Yokohama		„	1	29·844	30	65·0	30	7·6	30	30	3	9	18	7	1	11	–	5	–	65·3	10	
30 to 35 -	130 to 135	„	2	29·885	18	72·6	18	6·8	18	18	1	10	6	2	1	4	–	1	–	73·3	6	
30 to 35 -	135 to 140	„	2	29·956	18	68·5	18	5·9	18	18	–	13	4	4	–	2	–	1	–	70·6	6	
40 to 45 -	145 to 150	June	1	29·925	6	53·5	6	8·3	6	6	–	3	3	–	–	1	–	1	–	62·0	2	
S. coast of Lian Tung		„	1	29·754	36	68·8	36	–	–	34	9	18	3	2	6	2	–	2	1	59·3	11	
N. Coast of Shangtung		„	1	29·836	6	68·3	6	–	–	6	1	5	–	1	–	–	–	1	–	61·0	2	
35 to 40 -	120 to 125	„	1	29·618	24	69·6	24	6·4	14	22	3	14	5	2	–	4	–	2	4	65·0	4	
Chiefly at Shanghae		„	2	29·747	54	70·5	54	6·4	54	54	8	25	18	43	–	15	–	–	–	71·7	17	
30 to 35 -	120 to 125	„	3	29·774	15	68·8	15	4·7	12	15	4	8	2	6	1	–	–	–	1	66·0	2	
N.W. coast of Korea Strait		„	1	29·757	66	69·2	66	7·4	66	66	10	16	37	24	17	17	–	18	–	65·2	22	Force 8, thrice from E.N.E., N.E., E.
S.E. coast of Korea Strait -		„	2	29·858	30	71·2	30	5·9	18	30	4	15	11	8	–	5	–	4	–	72·5	10	
30 to 35 -	125 to 130	„	3	29·799	24	68·3	24	7·1	15	24	–	16	8	5	1	5	–	1	–	70·2	6	

Position.		Month.	No. of Years Observations.	Barometer.		Temp. of Air.		Cloud.		Weather.										Temp. of Sea.		Remarks.
Latitude, N.	Longitude, E.			Average Ins.	No. of Observations.	Average.	No. of Observations.	Average amount. (0 to 10).	No. of Observations.	Total Observations.	b.	c.	o.	m.	f.	r. & h.	s.	q.	t. & l.	Average.	No. of Observations.	
						°																
Chiefly at Simonosaki		June	1	29·827	51	73·8	51	–	–	51	–	40	11	1	–	13	–	1	–	71·7	16	
30 to 35	130 to 135	„	2	29·798	21	69·9	21	6·5	15	21	2	12	7	3	–	4	–	–	–	69·7	7	
30 to 35	135 to 140	„	1	29·715	6	73·5	6	5·8	6	6	2	2	2	1	–	1	–	–	1	74·5	2	Force 8 once, from S.W.
35 to 40	145 to 150	„	1	29·973	6	62·2	6	8·3	6	6	–	2	4	–	–	–	–	–	–	68·5	2	
30 to 35	140 to 145	„	1	29·866	9	64·6	9	9·2	9	9	–	2	7	–	–	4	–	–	2	71·0	3	
40 to 45	135 to 140	July	1	29·748	6	69·6	6	8·4	5	5	–	2	3	1	–	1	–	–	–	—	–	
45 to 50	140 to 145	„	1	29·717	27	57·9	27	8·4	27	27	–	8	18	7	8	12	–	–	1	—	–	In harbour.
40 to 45	140 to 145	„	1	29·912	18	63·7	17	3·0	18	18	11	4	2	5	–	–	–	–	–	—	–	In harbour.
35 to 40	115 to 120	„	1	29·702	15	79·3	15	6·3	9	15	–	13	2	2	–	1	–	–	2	79·3	5	
E. coast of Gulf of Lian Tung.		„	1	29·810	21	67·9	21	–	–	20	3	16	1	–	1	–	–	–	–	59·6	7	
S. coast of Lian Tung		„	1	29·699	42	73·4	42	5·5	42	42	4	34	4	1	4	–	–	1	4	71·7	13	
35 to 40	120 to 125	„	1	29·674	12	73·7	12	3·3	4	12	3	5	3	1	1	1	–	1	1	72·5	4	
Chiefly at Shanghae		„	1	29·678	25	77·1	25	6·1	25	25	7	8	10	2	–	2	–	5	–	—	–	Force 8 twice, from N.W., S.
30 to 35	120 to 125	„	1	29·695	2	78·5	1	10·0	1	2	–	1	1	1	–	–	–	–	–	—	–	
N.W. coast of Korea Strait		„	1	29·723	93	75·7	93	5·6	93	93	14	54	21	51	9	10	–	11	4	70·4	31	Force 8 twice, from S.E., S.W.
S.E. coast of Korea Strait		„	1	29·813	36	80·8	36	–	–	36	–	32	4	3	–	4	–	1	–	80·1	12	Force 8 once, from S.W.
30 to 35	125 to 130	„	3	29·869	21	80·0	21	3·2	18	21	10	10	1	1	–	–	–	–	1	82·0	1	
35 to 40	130 to 135	„	2	29·847	21	72·8	21	5·5	21	21	8	5	8	–	–	1	–	–	–	71·1	4	
Chiefly at Yokohama		„	1	29·816	12	78·7	12	–	–	12	–	10	2	–	–	2	–	2	2	76·3	4	Force 8 once, from S.S.W.
35 to 40	135 to 140	„	1	29·894	6	75·3	6	5·3	6	6	3	1	2	2	1	–	–	–	–	—	–	
30 to 35	130 to 135	„	2	29·786	9	82·0	9	2·7	3	9	2	7	–	–	–	–	–	–	–	81·0	2	
30 to 35	135 to 140	„	1	29·758	9	80·2	9	–	–	9	–	9	–	–	–	–	–	–	–	82·0	3	
40 to 45	130 to 135	Aug.	3	29·807	124	69·4	120	7·0	64	124	13	53	57	28	6	22	–	5	–	—	–	Off the coast of Tartary.
40 to 45	130 to 135	„	3	29·879	26	70·3	25	7·0	23	26	7	6	13	9	2	3	–	1	–	—	–	
45 to 50	135 to 140	„	1	29·712	6	60·3	6	9·7	6	6	–	1	4	3	2	–	–	–	–	—	–	
40 to 45	135 to 140	„	2	29·763	32	66·5	31	3·5	13	32	10	10	12	2	–	8	–	–	–	—	–	Off the coast of Tartary.
40 to 45	135 to 140	„	3	29·807	31	69·6	31	7·8	30	30	1	10	17	5	3	4	–	–	–	67·7	2	
40 to 45	140 to 145	„	2	29·637	36	71·7	36	5·8	36	36	6	23	5	10	4	3	–	–	1	61·0	1	In harbour.
40 to 45	145 to 150	„	1	29·878	3	59·6	3	10·0	3	3	–	–	–	–	3	–	–	–	–	57·0	1	
At mouth of Peiho		„	1	29·709	78	79·0	78	5·0	28	78	11	54	13	–	–	5	–	9	–	78·6	25	
35 to 40	125 to 130	„	1	29·960	6	70·1	6	10·0	6	6	–	–	6	5	–	1	–	1	–	—	–	
Chiefly at Shanghae		„	1	29·768	15	80·5	15	6·3	13	15	2	6	7	–	–	2	–	7	–	—	–	Force 8 once, from N.N.E.
30 to 35	120 to 125	„	2	29·707	6	82·2	6	2·7	6	6	2	4	–	2	–	–	–	3	–	85·0	1	Force 8 once, from E.
N.W. coast of Korea Strait		„	1	29·788	36	77·3	36	5·1	36	36	6	23	6	10	–	1	–	4	1	74·7	12	Force 8 once, from S.E.
S.E. coast of Korea Strait		„	1	29·734	45	82·9	45	4·5	45	45	11	30	4	5	–	7	–	4	1	84·1	15	Force 8 once, from S.
30 to 35	125 to 130	„	3	29·831	30	81·3	30	4·8	30	30	6	21	3	6	–	2	–	1	2	82·2	5	Force 8 once, from E.N.E.
35 to 40	130 to 135	„	2	29·852	18	77·4	18	5·0	18	18	8	4	6	4	–	3	–	2	1	—	–	
Chiefly at Yokohama		„	1	29·851	54	80·3	54	–	–	54	4	38	12	–	–	10	–	7	4	80·8	18	
35 to 40	135 to 140	„	1	29·975	18	77·7	18	3·0	18	18	7	11	–	4	–	–	–	–	–	—	–	
30 to 35	130 to 135	„	2	29·819	18	81·3	18	4·7	18	18	2	15	1	3	–	2	–	1	1	82·0	1	
S. of Nipon	135 to 140	„	1	29·863	15	81·1	15	–	–	15	2	13	–	–	–	1	–	1	1	79·4	5	
30 to 35	135 to 140	„	1	29·760	3	81·0	3	6·3	3	3	–	3	–	–	–	–	–	–	–	80·5	1	
Gulf of Lian Tung		Sept.	1	30·001	30	72·0	30	–	–	29	4	22	1	–	5	–	–	1	–	72·3	10	
40 to 45	130 to 135	„	1	29·974	40	66·7	40	3·9	39	39	20	10	9	7	–	2	–	–	–	—	–	Off the coast of Tartary.
40 to 45	130 to 135	„	2	29·993	14	69·1	14	2·0	11	14	10	3	1	3	–	–	–	–	–	—	–	
40 to 45	135 to 140	„	1	29·750	35	62·9	33	–	–	35	2	14	19	4	–	14	–	12	–	—	–	Off the coast of Tartary. Force 8 five times, from N.E. to N.N.W.
40 to 45	135 to 140	„	1	29·936	4	59·8	4	–	–	4	–	4	–	–	–	–	–	–	–	—	–	
45 to 50	140 to 145	„	1	29·795	45	52·7	38	2·0	1	45	4	35	4	4	–	6	–	19	2	—	–	In harbour.
At Ninghai		„	1	29·991	15	69·1	15	–	–	15	1	13	1	1	–	–	–	4	1	72·4	5	
At Mouth of Peiho		„	1	29·934	102	74·1	101	3·8	91	102	41	48	13	2	–	6	–	1	–	73·5	33	
Chosan		„	2	29·937	4	72·5	4	10·0	2	2	–	–	2	2	–	–	–	–	–	—	–	
35 to 40	120 to 125	„	2	29·870	12	76·3	12	5·8	6	11	1	8	2	–	–	1	–	3	1	75·6	4	
35 to 40	125 to 130	„	2	29·927	5	74·8	5	6·2	5	5	1	2	2	1	–	2	–	–	–	—	–	
Chiefly at Shanghae		„	2	29·914	99	76·8	98	6·6	78	99	12	54	33	–	–	26	–	14	3	75·6	5	
30 to 35	120 to 125	„	4	29·748	54	78·7	49	6·4	50	53	4	32	13	9	–	14	–	14	1	80·2	6	Force 8 three times, in gales from northward.
N.W. coast of Korea Strait		„	1	29·971	45	72·7	45	5·1	45	45	8	29	8	13	–	2	–	2	1	73·1	15	
S.E. coast of Korea Strait		„	3	29·888	135	78·1	135	5·3	130	131	36	58	35	17	–	21	–	9	2	78·3	2	Force 8 once, from S.
30 to 35	125 to 130	„	6	29·903	45	76·1	45	6·0	42	44	9	21	13	14	1	9	–	3	–	77·4	13	Force 8 once, from E.
35 to 40	130 to 135	„	1	29·991	15	73·9	15	4·1	15	15	5	8	2	4	–	–	–	–	–	—	–	
Chiefly at Yokohama		„	1	29·910	48	76·3	48	–	–	48	6	28	14	1	–	5	–	14	–	78·7	16	
S. of Nipon	135 to 140	„	1	29·965	39	74·3	38	–	–	39	3	25	11	3	–	3	–	7	–	76·9	13	
30 to 35	130 to 135	„	1	26·985	6	76·3	6	8·0	6	6	–	3	3	–	–	1	–	4	–	77·5	2	
30 to 35	135 to 140	„	1	29·941	9	74·8	9	8·1	9	9	–	5	4	–	–	4	–	1	–	78·3	2	Force 8 once, from E.N.E.
Gulf of Lian Tung		Oct.	1	30·117	66	56·4	66	–	–	61	8	44	11	3	1	5	–	10	2	60·9	22	Force 8 twice, from N.N.W. W.S.W.
45 to 50	140 to 145	„	1	30·001	15	55·9	15	–	–	15	1	8	6	–	–	4	–	6	–	—	–	In harbour.
40 to 45	140 to 145	„	1	29·969	33	55·7	33	5·3	9	33	2	25	6	3	–	7	–	9	1	—	–	In harbour.
At mouth of Peiho		„	1	30·080	27	64·6	27	5·0	27	27	9	13	5	–	–	1	–	–	–	64·8	9	Force 8 once, from N.W.
S. coast of Shangtung		„	1	30·220	57	61·2	57	3·6	57	57	22	28	6	26	–	4	–	8	–	63·9	19	
E. coast of Gulf of Lian Tung.		„	1	30·182	12	52·1	12	–	–	12	2	6	4	–	–	2	–	3	–	59·3	4	
35 to 40	120 to 125	„	1	30·176	3	67·3	3	1·3	3	3	2	1	–	3	–	–	–	–	–	69·0	1	

Position.		Month.	No. of Years Observations.	Barometer.		Temp. of Air.		Cloud.		Weather.										Temp. of Sea.		Remarks.
Latitude, N.	Longitude, E.			Average Ins.	No. of Observations.	Average.	No. of Observations.	Average amount (0 to 10).	No. of Observations.	Total Observations.	b.	c.	o.	m.	f.	r. & h.	s.	q.	t. & l.	Average.	No. of Observations.	
						°																
Chiefly at Shanghae		Oct.	2	30·133	114	66·9	104	5·7	90	114	19	64	29	3	1	19	–	2	–	70·0	7	
30 to 35	120 to 125	„	2	30·183	12	65·0	12	4·6	12	12	3	7	2	3	–	–	–	1	–	69·0	3	
S.E. coast of Korea Strait		„	1	30·070	63	68·3	63	4·4	63	63	23	25	15	15	–	5	–	2	–	—	–	
30 to 35	125 to 130	„	1	30·071	12	68·6	12	7·8	12	12	–	7	5	2	–	2	–	–	–	—	–	
35 to 40	N.W. of Nipon.	„	1	30·006	36	57·4	36	4·7	9	36	4	21	11	–	–	9	–	15	3	—	–	Force 8 twice, from N.W., W.
S. of Nipon	135 to 140	„	1	29·937	24	71·4	24	–	–	24	3	13	8	–	–	3	–	3	–	74·3	7	
At Oosima		„	1	30·030	69	67·6	69	–	–	69	6	27	36	–	–	30	–	14	–	72·5	23	
At Ninghai		Nov.	1	30·365	15	43·7	15	9·0	1	15	10	4	1	–	–	–	–	3	–	51·0	5	
At Mouth of Peiho		„	1	30·140	18	46·6	18	–	–	18	7	6	3	3	–	–	–	6	–	48·0	6	Force 8 once from N.
35 to 40	115 to 120	„	1	30·325	12	49·0	12	1·3	3	12	6	4	2	–	–	–	–	–	–	53·0	4	
S. coast of Shangtung		„	1	30·330	63	48·6	63	4·3	63	63	28	21	12	19	–	3	1	18	–	55·6	21	Force 8 twice, from N.N.W., N.W.
E. coast of Gulf of Lian Tung.		„	1	30·200	6	50·3	6	–	–	6	1	4	1	1	–	–	–	–	–	58·5	2	
N. coast of Shangtung		„	1	30·286	17	40·8	16	7·0	2	17	–	5	12	–	–	6	2	12	–	51·3	6	
Chosan		„	1	30·182	24	48·2	22	4·5	6	24	8	15	1	1	–	1	–	3	–	55·8	8	
35 to 40	120 to 125	„	3	30·366	13	53·2	13	5·3	6	13	1	8	4	4	1	2	–	1	–	56·3	4	
Chiefly at Shanghae		„	2	30·256	83	58·1	81	1·5	80	87	59	25	2	10	1	–	–	5	–	56·0	2	Force 8 once, from S.W.
30 to 35	120 to 125	„	5	30·372	37	49·7	38	4·1	24	37	10	24	3	2	–	2	1	5	–	54·3	6	
S.E. coast of Korea Strait		„	1	30·122	24	56·4	24	–	–	24	9	14	1	–	–	1	–	2	–	66·6	8	
30 to 35	125 to 130	„	1	30·109	21	56·7	21	–	–	21	1	18	2	1	–	2	–	6	–	65·6	7	
35 to 40	130 to 135	„	1	30·085	15	60·8	14	3·5	8	15	4	9	2	–	–	1	–	2	–	63·2	5	
35 to 40	N.W. of Nipon.	„	1	30–027	51	55·5	50	6·4	27	51	4	30	17	–	–	22	1	20	2	63·2	19	Force 8 twice, from W., W.S.W.
Chiefly at Simonosaki		„	1	30·049	27	60·4	27	–	–	27	3	15	9	–	–	6	–	7	–	67·7	9	
S. of Nipon	135 to 140	„	1	30·083	15	61·3	15	–	–	15	4	8	3	1	–	–	–	2	–	72·0	5	
35 to 40	115 to 120	Dec.	1	30·227	18	42·5	18	0·8	18	18	18	–	–	2	–	–	–	–	–	42·8	5	
S. coast of Shangtung		„	1	30·002	5	47·4	5	–	–	5	3	2	–	1	–	–	–	1	–	50·5	2	
N. coast of Shangtung		„	1	30·318	75	34·4	74	4·4	75	75	34	24	17	–	–	–	6	15	–	40·4	24	Force 8 once, from N.W.
Chosan		„	1	29·916	4	42·0	4	–	–	4	1	3	–	–	–	–	–	3	–	53·5	2	
35 to 40	120 to 125	„	2	30·172	16	44·4	16	8·5	2	15	2	10	3	–	–	1	–	8	–	56·3	4	
35 to 40	125 to 130	„	1	30·120	2	48·0	2	6·0	2	2	1	–	1	–	–	–	–	–	–	63·0	1	
Chiefly at Shanghae		„	6	30·284	300	46·5	292	6·7	159	300	53	118	128	19	5	50	–	28	2	46·7	78	
30 to 35	120 to 125	„	3	30·246	27	51·1	26	2·7	19	27	11	10	6	3	–	4	–	2	–	52·5	4	
N.W. coast of Korea Strait		„	1	30·004	18	47·1	16	6·0	4	17	1	14	2	1	–	2	2	14	–	62·5	6	Force 8 thrice, in a gale from S.S.W. and N.W.
S.E. coast of Korea Strait		„	1	30·187	17	51·3	16	2·8	13	13	9	3	1	–	–	–	–	–	–	60·8	5	
30 to 35	125 to 130	„	2	30·160	21	53·0	19	6·2	13	19	5	8	6	2	1	2	–	4	–	61·7	7	
Chiefly at Yokohama		„	1	30·038	24	41·1	22	6·1	19	20	5	8	7	–	–	–	–	2	–	51·6	8	
30 to 35	130 to 135	„	1	30·040	6	46·2	5	8·3	6	6	1	1	4	–	–	–	–	–	–	63·0	2	
30 to 35	135 to 140	„	1	30·082	3	45·0	3	0·7	3	3	3	–	–	–	–	–	–	1	–	61·0	1	

Approximate Annual Values from the Monthly Averages.

Shanghae	12 months	30·060	1,368	60·1	1,336	5·7	790	1,372	264	584	502	160	17	239	10	103	12	58·0	208	
S.E. coast of Korea Strait	11 „	29·989	509	64·6	508	5·1	407	501	127	243	129	67	1	78	5	44	3	68·3	105	
35 to 40 - 120 to 125	11 „	30·071	157	53·3	157	5·0	82	153	35	77	38	24	3	16	3	25	6	56·9	46	
30 to 35 - 120 to 125	12 „	30·032	354	60·5	322	5·6	293	346	85	145	89	77	23	50	2	42	5	61·4	51	
30 to 35 - 125 to 130	12 „	30·008	278	63·0	256	6·4	229	270	43	139	87	46	4	45	–	45	4	67·7	66	
30 to 35 - 130 to 135	9 „	29·927	102	67·0	101	6·1	90	102	12	62	27	8	1	10	–	15	1	71·8	28	

Position.		Month.	Total Observations.	Observations of Wind, referred to 16 Points, with Mean of Force (Scale, 0 to 12).																												Variables		No. of Calms.
Latitude, N.	Longitude, E.			N.		N.N.E.		N.E.		E.N.E.		E.		E.S.E.		S.E.		S.S.E.		S.		S.S.W.		S.W.		W.S.W.		W.		W.N.W.		N.W.		N.N.W.				
				O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.	O.	F.			
N. coast of Shangtung		Jan.	93	15	3·4	21	3·5	10	2·9	2	2·5	2	4·0	1	2·0	–	–	–	–	2	3·5	2	2·0	5	2·8	6	2·5	8	2·1	3	3·3	9	4·3	3	2·3	–	–	4
35 to 40	120 to 125	,,	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2·0	1	4·0	1	7·0	3	5·0	–	–	–
Chiefly at Shanghae		,,	261	72	2·5	15	3·3	16	3·6	3	3·7	9	2·8	1	1·0	8	2·8	2	1·5	7	2·0	2	1·0	4	2·3	1	3·0	6	1·7	3	3·3	42	3·0	18	3·3	–	–	52
30 to 35	120 to 125	,,	47	6	4·8	4	3·3	6	2·8	4	3·0	–	–	–	–	1	3·0	–	–	2	4·5	–	–	1	4·0	–	–	2	3·0	3	5·0	7	4·9	6	5·8	3	2·3	2
S.E. coast of Korea Strait		,,	45	11	2·6	6	3·0	3	2·3	1	1·0	3	3·0	–	–	1	2·0	–	–	2	3·5	–	–	1	2·0	–	–	1	5·0	–	–	5	3·2	4	4·3	1	1·0	6
30 to 35	125 to 130	,,	21	5	3·2	2	3·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chiefly at Yokohama		,,	18	7	2·1	1	3·0	1	2·0	–	–	–	–	1	1·0	–	–	–	–	–	–	–	–	–	–	1	2·0	1	1·0	–	–	1	1·0	3	1·7	–	–	2
35 to 40	135 to 140	,,	3	2	4·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
30 to 35	130 to 135	,,	9	–	–	1	7·0	1	6·0	1	6·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
30 to 35	135 to 140	,,	6	–	–	–	–	2	3·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3·0	3	6·0	1	5·0	1	2·0	–
S. coast of Lian Tung		Feb.	22	11	3·5	2	2·0	2	2·5	–	–	–	–	–	–	–	–	–	–	2	2·5	–	–	–	–	–	–	–	–	2	3·5	2	7·0	–	–	–	–	–
N. coast of Shangtung		,,	84	9	4·7	6	5·8	7	2·9	2	3·0	3	1·0	2	2·0	3	1·7	1	1·0	1	2·0	4	1·3	10	2·5	6	3·3	5	3·2	2	3·5	9	3·7	4	3·8	–	–	1
35 to 40	120 to 125	,,	14	–	–	1	5·0	2	2·0	–	–	–	–	1	3·0	–	–	–	–	–	–	1	3·0	2	3·5	–	–	3	5·0	–	–	–	–	–	–	–	–	10
Chiefly at Shanghae		,,	132	41	2·3	16	3·3	10	3·4	2	2·5	6	1·2	4	2·5	7	2·0	1	2·0	–	–	–	–	1	3·0	–	–	–	–	–	–	1	3·0	–	–	–	–	4
30 to 35	120 to 125	,,	73	10	2·4	8	4·3	4	4·3	3	3·3	7	4·4	2	3·0	3	3·0	2	4·0	3	3·7	1	3·0	2	3·0	6	5·8	–	–	3	2·3	–	–	8	1·9	9	2·3	–	–	24
30 to 35	125 to 130	,,	12	1	5·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2·0	–	–	5	6·0	3	7·0	–	–	2	4·5	–	–	–
Chiefly at Yokohama		,,	54	16	3·1	5	3·4	4	4·0	–	–	1	3·0	2	2·5	–	–	–	–	–	–	1	5·0	1	6·0	–	–	3	3·0	–	–	2	3·0	6	3·7	2	1·0	11
35 to 40	135 to 140	,,	3	–	–	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5·0	–	–	1	4·0	–	–	–	–	–	–	–
30 to 35	130 to 135	,,	6	2	7·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	–	–	2	4·5	1	2·0	–	–	–
30 to 35	135 to 140	,,	21	2	7·0	2	3·0	1	5·0	–	–	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	6·0	4	5·0	5	5·4	2	5·5	–	–	2
At mouth of Peiho		Mar.	27	1	1·0	–	–	1	5·0	2	3·5	6	4·0	2	2·5	2	2·5	3	3·0	3	2·7	3	2·3	–	–	1	1·0	1	2·0	–	–	–	–	–	–	–	–	2
35 to 40	115 to 120	,,	21	1	5·0	–	–	1	4·0	–	–	–	–	–	–	2	2·5	–	–	6	3·0	2	2·0	1	2·0	2	2·5	1	2·0	–	–	4	3·3	1	3·0	–	–	–
N. coast of Shangtung		,,	130	26	3·9	13	3·7	5	2·2	5	2·2	7	2·7	2	1·5	3	1·3	2	3·0	7	3·0	3	1·7	6	2·3	7	2·7	9	1·8	5	3·0	8	2·0	8	3·0	1	1·0	13
35 to 40	120 to 125	,,	17	–	–	–	–	2	4·0	–	–	–	–	1	3·0	3	1·7	2	2·0	1	3·0	–	–	–	–	–	–	5	2·6	1	6·0	–	–	1	3·0	–	–	1
Chiefly at Shanghae		,,	39	2	3·0	2	1·0	4	2·3	3	2·3	9	2·0	1	2·0	4	1·3	–	–	2	1·5	–	–	–	–	–	–	1	1·0	–	–	1	3·0	2	2·0	–	–	8
30 to 35	120 to 125	,,	18	4	3·3	2	3·0	1	6·0	–	–	–	–	1	1·0	–	–	–	–	1	2·0	1	1·0	–	–	–	–	–	–	1	2·0	1	4·0	5	4·6	–	–	1
N.W. coast of Korea Strait		,,	18	–	–	–	–	2	5·5	–	–	3	3·0	–	–	5	3·8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S.E. coast of Korea Strait		,,	30	10	3·1	2	3·0	4	3·0	–	–	–	–	–	–	1	3·0	–	–	–	–	–	–	1	3·0	1	4·0	6	6·7	–	–	–	–	–	–	–	–	–
30 to 35	125 to 130	,,	42	1	5·0	6	7·2	7	5·9	4	4·0	3	2·0	1	5·0	–	–	3	6·0	1	5·0	2	6·0	1	3·0	1	2·0	2	3·5	–	–	4	5·5	4	4·8	–	–	2
30 to 35	130 to 135	,,	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	3·5	1	2·0	2	3·0	–	–	–	–	2
35 to 40	115 to 120	April	24	2	1·5	4	3·3	2	5·5	1	7·0	1	1·0	–	–	1	2·0	1	2·0	3	3·3	2	2·5	2	1·5	1	3·0	–	–	1	1·0	1	6·0	2	5·5	–	–	–
N. coast of Shangtung		,,	130	8	2·8	8	3·1	8	2·0	9	2·3	4	2·3	4	1·8	6	2·7	2	2·5	8	3·1	11	4·1	7	3·0	4	2·5	5	2·2	9	2·6	16	2·6	3	1·7	1	1·0	17
35 to 40	120 to 125	,,	20	1	2·0	3	4·0	–	–	1	2·0	2	3·0	–	–	–	–	–	–	2	3·0	–	–	–	–	3	5·0	3	2·3	–	–	1	6·0	1	5·0	–	–	3
Chiefly at Shanghae		,,	108	3	2·7	9	3·9	13	2·8	5	3·2	13	2·5	3	3·0	12	2·8	6	3·0	7	2·3	1	1·0	3	2·3	–	–	2	3·0	4	2·8	9	3·8	3	2·7	2	1·0	13
30 to 35	120 to 125	,,	47	2	3·0	6	3·7	5	4·2	4	2·8	4	3·8	2	5·0	3	2·0	6	2·3	–	–	2	3·0	1	6·0	1	3·0	2	3·0	4	4·8	1	3·0	1	3·0	1	1·0	2
S.E. coast of Korea Strait		,,	30	12	2·2	2	2·5	–	–	–	–	1	3·0	1	3·0	1	3·5	2	2·0	–	–	1	3·0	1	2·0	–	–	–	–	–	–	–	–	–	–	1	1·0	8
30 to 35	125 to 130	,,	12	3	4·0	1	5·0	3	5·0	3	4·3	1	5·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	–
S. coast of Shangtung		May	28	2	1·0	–	–	2	3·0	2	3·0	2	3·0	–	–	2	1·5	1	4·0	8	3·4	2	1·5	2	3·0	1	3·0	–	–	–	–	1	4·0	1	3·0	–	–	2
N. coast of Shangtung		,,	120	5	1·8	1	1·0	2	2·0	1	1·0	4	1·5	3	2·3	7	2·4	16	2·8	30	3·2	3	2·0	4	2·8	1	2·0	9	2·0	10	2·5	11	3·5	9	2·8	–	–	4
35 to 40	120 to 125	,,	20	3	3·0	1	2·0	1	8·0	1	6·0	1	3·0	–	–	2	2·0	–	–	1	1·0	–	–	2	2·5	1	3·0	2	1·0	1	5·0	2	3·5	2	3·0	–	–	–
Chiefly at Shanghae		,,	138	3	3·0	10	2·9	16	2·8	4	4·0	9	3·9	7	4·3	29	3·2	13	2·5	1	2·0	3	2·3	6	2·2	1	1·0	2	2·5	1	4·0	4	3·8	2	4·0	20	1·3	7
30 to 35	120 to 125	,,	18	5	3·8	1	4·0	4	2·5	–	–	1	1·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2·3	2	2·5	–	–	–	–	2	2·0	–
S.E. coast of Korea Strait		,,	54	8	3·0	2	1·5	6	2·0	1	3·0	3	1·3	–	–	–	–	–	–	3	4·3	1	3·0	8	2·9	1	1·0	1	4·0	–	–	–	–	1	4·0	–	–	19
30 to 35	125 to 130	,,	18	–	–	–	–	4	6·0	1	7·0	2	3·0	1	2·0	2	6·5	–	–	2	3·0	1	1·0	1	3·0	1	3·0	–	–	–	–	–	–	–	–	–	3
Chiefly at Yokohama		,,	30	4	2·8	2	3·5	3	2·7	1	3·0	1	2·0	–	–	1	3·0	–	–	6	2·3	–	–	4	4·3	–	–	–	–	–	–	–	–	–	–	–	–	6
30 to 35	130 to 135	,,	18	–	–	1	3·0	1	6·0	5	4·2	3	2·7	–	–	2	2·5	2	5·5	–	–	–	–	–	–	1	2·0	–	–	1	4·0	–	–	1	3·0	–	–	1
30 to 35	135 to 140	,,	18	–	–	1	6·0	2	2·5	2	2·0	3	3·7	–	–	2	2·5	–	–	1	2·0	–	–	5	3·4	–	–	1	3·0	–	–	1	4·0	–	–	–	–	–
40 to 45	145 to 150	June	6	–	–	3	2·0	–	–	1	3·0	–	–	1	7·0	1	2·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S. coast of Lian Tung		,,	36	1	4·0	–	–	2	1·0	1	3·0	5	2·2	5	2·2	3	2·0	2	3·5	2	2·0	1	1·0	7	4·0	–	–	3	1·7	–	–	1	4·0	–	–	–	–	3
N. coast of Shangtung		,,	6	–	–	–	–	–	–	–	–	–	–	–	–	1	6·0	1	3·0	1	4·0	1	3·0	1	4·0	–	–	–	–	–	–	–	–	–	–	–	–	1
35 to 40	120 to 125	,,	24	1	3·0	–	–	2	6·0	–	–	1	2·0	2	3·5	2	3·0	–	–	4	3·5	–	–	1	2·0	1	1·0	2	1·5	2	2·5	1	3·0	–	–	1	1·0	4
Chiefly at Shanghae		,,	54	3	3·0	1	2·0	3	2·3	4	2·5	–	–	5	3·4	17	3·2	3	3·0	4	4·0	–	–	–	–	–	–	1	4·0	–	–	1	3·0	1	3·0	9	1·3	2
30 to 35	120 to 125	,,	15	–	–	–	–	1	2·0	–	–	–	–	1	3·0	1	4·0	4	3·3	3	4·0	–	–	1	2·0	–	–	–	–	2	2·5	–	–	–	–	–	–	2
N.W. coast of Korea Strait		,,	66	2	2·5	1	3·0	5	4·2	6	5·8	5	3·8	2	4·5	3	2·0	2	3·5	11	4·0	6	5·0	4	4·0	1	4·0	3	3·3	1	3·0	–	–	–	–	6	2·0	8
S.E. coast of Korea Strait		,,	30	4	2·5	–	–	3	2·7	–	–	2	3·5	–	–	1	2·0	–	–	3	3·0	2	4·0	4	2·3	2	3·0	1	1·0	–	–	1	2·0	–	–	–	–	2
30 to 35	125 to 130	,,	24	2	3·0	1	1·0	4	2·8	3	3·0	1	2·0	2	4·5	1	1·0	–	–	–	–	–	–	3	1·7	–	–	2	2·0	1	3·0	1	2·0	1	2·0	–	–	7
Chiefly at Simonosaki		,,	51	1	2·0	–	–	4	1·0	–	–	1	2·0	2	2·0	2	1·0	1	1·0	2	1·5	1	4·0	6	2·0	3	2·3	3	3·0	3	3·0	4	2·3	–	–	1	1·0	17
30 to 35	130 to 135	,,	21	–	–	1	1·0	2	3·0	2	3·0	1	3·0	2	2·5	1	2·0	–	–	–	–	–	–	1	3·0	1	1·0	1	1·0	–	–	2	2·5	1	2·0	1	1·0	5
30 to 35	135 to 140	,,	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3·0	–	–	–	–	1	11·0	1	3·0	1	2·0	–	–	2	4·5	–	–	–	–	–
35 to 40	145 to 150	,,	6	–	–	1	3·0	–	–	–	–	1	7·0	4	4·8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
30 to 35	140 to 145	,,	9	1	3·0	1	3·0	1	3·0	1	3·0	2	7·0	2	6·0	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
40 to 45	135 to 140	July	6	–	–	–	–	1	1·0	–	–	–	–	–	–	1	3·0	–	–	1	3·0	2	3·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
45 to 50	140 to 145 in harbour.	,,	27	2	3·0	5	2·6	4	3·0	4	1·8	1	2·0	–	–	–	–	–	–	2	1·5	1	7·0	–	–	–	–	1	1·0	–	–	1	3·0	–	–	2	1·0	4
40 to 45	140 to 145 in harbour.	,,	18	4	2·0	–	–	–	–	–	–	5	2·2	1	1·0	2	3·5	–	–	1	2·0	–	–	–	–	–	–	–	–	–	–	1	4·0	2	3·5	1	2·0	1

N.B.—The letter O denotes the number of observations for direction: and, F, the mean force, of wind.

Position. Latitude, N.	Position. Longitude, E.	Month.	Total Observations.	Observations of Wind, referred to 16 Points, with Mean of Force (Scale, 0 to 12). N. O.	N. F.	N.N.E. O.	N.N.E. F.	N.E. O.	N.E. F.	E.N.E. O.	E.N.E. F.	E. O.	E. F.	E.S.E. O.	E.S.E. F.	S.E. O.	S.E. F.	S.S.E. O.	S.S.E. F.	S. O.	S. F.	S.S.W. O.	S.S.W. F.	S.W. O.	S.W. F.	W.S.W. O.	W.S.W. F.	W. O.	W. F.	W.N.W. O.	W.N.W. F.	N.W. O.	N.W. F.	N.N.W. O.	N.N.W. F.	Variables O.	Variables F.	No. of Calms.
35 to 40 -	115 to 120	July	15	1	4·0	–	–	–	–	1	3·0	2	2·5	1	1·0	6	3·3	–	–	1	1·0	–	–	1	1·0	–	–	1	1·0	–	–	–	–	–	–	–	–	1
E. coast of Gulf of Lian Tung.		„	21	–	–	–	–	1	1·0	2	1·5	6	1·7	2	2·5	2	2·0	–	–	–	–	1	2·0	–	–	1	2·0	–	–	–	–	1	2·0	–	–	–	–	5
S. coast of Lian Tung -		„	42	–	–	–	–	–	–	–	–	8	1·4	1	2·0	7	1·1	–	–	4	1·0	2	2·5	9	3·4	–	–	3	1·3	–	–	–	–	–	–	–	–	8
35 to 40 -	120 to 125	„	12	1	2·0	–	–	1	1·0	–	–	–	–	–	–	2	1·5	1	2·0	–	–	3	2·7	–	–	–	–	1	1·0	–	–	2	4·0	1	6·0	–	–	–
Chiefly at Shanghae -		„	25	–	–	–	–	2	4·5	1	1·0	–	–	3	3·3	8	2·6	1	5·0	2	5·0	–	–	–	–	–	–	3	6·0	–	–	3	5·0	1	2·0	–	–	1
30 to 35 -	120 to 125	„	2	–	–	–	–	–	–	–	–	–	–	–	–	1	4·0	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
N.W. coast of Korea Strait		„	93	–	–	–	–	3	5·3	3	3·7	16	3·3	7	3·7	3	4·3	2	1·5	5	3·2	3	2·3	14	3·4	2	3·0	3	2·7	1	2·0	–	–	–	–	4	1·0	27
S.E. coast of Korea Strait		„	36	–	–	–	–	–	–	–	–	3	1·7	–	–	1	1·0	4	2·5	2	2·0	2	2·0	6	2·7	2	2·0	1	1·0	3	1·3	3	1·3	–	–	–	–	9
30 to 35 -	125 to 130	„	21	–	–	–	–	–	–	–	–	–	–	–	–	3	3·3	1	6·0	5	1·6	6	2·2	2	3·0	–	–	–	–	1	2·0	1	1·0	1	2·0	–	–	1
35 to 40 -	130 to 135	„	21	2	2·5	–	–	1	1·0	2	3·0	4	3·8	1	1·0	1	2·0	2	2·5	1	2·0	2	2·0	2	3·0	–	–	–	–	–	–	–	–	–	–	1	1·0	2
Chiefly at Yokohama -		„	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	2·9	2	5·0	1	4·0	–	–	–	–	–	–	–	–	–	–	–	–	–
35 to 40 -	135 to 140	„	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	2·8	–	–	1	3·0	–	–	–	–	1	1·0	–	–	–
30 to 35 -	130 to 135	„	9	2	2·5	–	–	–	–	–	–	–	–	1	4·0	–	–	–	–	2	3·0	1	2·0	–	–	–	–	1	1·0	–	–	1	2·0	1	4·0	–	–	–
30 to 35 -	135 to 140	„	9	2	4·5	–	–	1	2·0	2	2·0	2	1·5	–	–	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
40 to 45 -	130 to 135 off coast of Tartary.	Aug.	124	4	1·3	3	1·7	16	1·9	3	4·0	9	1·9	2	2·0	11	1·9	11	2·5	7	1·6	2	3·0	7	1·9	4	3·3	7	2·0	4	5·0	6	3·8	4	2·8	3	1·7	21
40 to 45 -	130 to 135	„	26	1	7·0	2	3·5	1	2·0	1	4·0	–	–	1	4·0	–	–	–	–	3	1·0	1	1·0	4	3·3	1	2·0	4	4·0	–	–	4	2·5	–	–	1	3·0	2
45 to 50 -	135 to 140	„	6	1	4·0	–	–	2	2·0	1	1·0	2	3·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
40 to 45 -	135 to 140 off coast of Tartary.	„	32	1	1·0	1	3·0	2	1·0	1	1·0	1	3·0	–	–	–	–	–	–	6	2·0	3	1·7	3	2·0	–	–	–	–	–	–	1	2·0	1	4·0	–	–	12
40 to 45 -	135 to 140	„	31	2	2·0	4	3·0	3	2·3	1	5·0	3	2·7	–	–	2	3·5	–	–	3	2·0	–	–	4	4·0	–	–	1	1·0	–	–	2	2·0	1	2·0	3	1·0	2
40 to 45 -	140 to 145	„	36	1	3·0	2	2·5	–	–	2	2·0	1	1·0	2	3·5	1	2·0	4	4·5	2	3·0	2	3·5	3	3·7	1	2·0	3	1·7	3	1·5	4	2·0	–	–	1	1·0	5
40 to 45 -	145 to 150	„	3	–	–	–	–	–	–	–	–	–	–	–	–	3	5·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
At mouth of Peiho -		„	78	1	2·0	2	3·0	3	3·7	5	3·0	11	3·9	3	4·0	20	2·1	5	3·2	6	2·5	5	2·2	3	2·7	–	–	2	3·0	–	–	4	4·3	2	2·0	–	–	6
35 to 40 -	125 to 130	„	6	2	4·0	1	6·0	–	–	–	–	2	3·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4·0	–	–	–	–	–	–	–	–	–
Chiefly at Shanghae -		„	15	4	5·3	2	7·0	4	4·8	–	–	3	2·7	1	5·0	1	4·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
30 to 35 -	120 to 125	„	6	–	–	–	–	–	–	–	–	2	7·5	3	5·0	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
N.W. coast of Korea Strait		„	36	1	2·0	–	–	4	3·3	1	2·0	4	2·8	–	–	5	3·2	1	3·0	2	2·0	–	–	3	4·3	–	–	1	4·0	2	2·0	2	3·0	–	–	–	–	10
S.E. coast of Korea Strait		„	45	–	–	–	–	1	1·0	4	2·0	3	1·3	–	–	2	3·0	–	–	2	5·5	–	–	4	2·8	1	2·0	1	4·0	–	–	–	–	–	–	6	1·0	21
30 to 35 -	125 to 130	„	30	2	1·0	–	–	2	6·5	3	5·7	4	2·5	1	1·0	–	–	–	–	1	2·0	2	2·0	1	5·0	–	–	3	4·3	1	2·0	3	2·3	1	6·0	–	–	6
35 to 40 -	130 to 135	„	18	–	–	–	–	3	5·0	4	4·5	1	5·0	1	6·0	–	–	–	–	–	–	–	–	4	3·5	1	2·0	1	5·0	–	–	1	1·0	–	–	2	1·5	–
Chiefly at Yokohama -		„	54	1	1·0	–	–	2	1·5	3	2·3	3	1·7	–	–	3	1·7	3	2·7	2	2·5	8	2·4	11	3·4	2	2·5	–	–	–	–	4	1·5	2	1·5	–	–	10
35 to 40 -	135 to 140	„	18	4	1·8	1	3·0	1	2·0	5	3·2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	–	–	1	1·0	1	2·0	–	–	–	–	4
30 to 35 -	130 to 135	„	18	1	1·0	–	–	–	–	–	–	–	–	–	–	1	5·0	–	–	–	–	1	3·0	4	2·8	2	1·5	–	–	1	5·0	1	3·0	2	1·5	1	1·0	4
S. of Nipon	135 to 140	„	15	2	2·5	1	2·0	1	1·0	–	–	–	–	–	–	–	–	–	–	1	2·0	3	1·0	3	4·3	2	1·5	–	–	–	–	–	–	–	–	–	–	2
30 to 35 -	135 to 140	„	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3·0	–	–	–	–	1	2·0	–	–	–	–	–	–	1
Gulf of Lian Tung -		Sept.	30	5	2·6	2	2·0	4	3·0	–	–	1	1·0	–	–	2	1·0	1	1·0	6	1·8	1	2·0	1	2·0	–	–	–	–	1	1·0	2	1·5	–	–	–	–	4
40 to 45 -	130 to 135 off the coast of Tartary.	„	40	5	3·6	–	–	9	3·7	1	2·0	1	2·0	–	–	5	2·2	2	5·0	3	2·3	–	–	2	4·0	1	1·0	4	3·0	1	3·0	4	3·8	–	–	–	–	2
40 to 45 -	130 to 135	„	14	–	–	–	–	–	–	–	–	–	–	2	2·0	–	–	–	–	3	1·0	–	–	1	1·0	6	2·2	–	–	–	–	1	1·0	–	–	–	–	1
40 to 45 -	135 to 140 off the coast of Tartary.	„	35	–	–	2	7·0	14	5·8	–	–	–	–	–	–	2	1·0	2	2·0	–	–	–	–	1	3·0	–	–	1	5·0	2	4·0	2	3·5	1	8·0	–	–	8
40 to 45 -	135 to 140	„	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	4·3	–	–	1	6·0	–	–	–	–	–	–	–	–	–	–	–	–	–
45 to 50 -	140 to 145 in harbour.	„	45	3	2·0	–	–	1	1·0	12	2·0	–	–	–	–	3	4·7	–	–	2	3·0	2	3·0	8	4·8	5	6·6	5	5·0	9	5·2	3	3·7	2	5·5	–	–	–
At Ninghai - - -		„	15	–	–	2	3·5	1	1·0	2	5·0	1	4·0	–	–	1	1·0	–	–	1	2·0	–	–	1	2·0	3	3·7	1	3·0	–	–	–	–	–	–	–	–	2
At mouth of Peiho -		„	102	1	3·0	2	2·5	5	2·0	2	3·5	9	3·4	7	3·0	12	1·8	8	2·4	9	1·6	7	2·6	18	2·6	3	3·0	2	1·0	–	–	5	1·2	1	1·0	2	1·0	9
Chosan - - -		„	4	1	2·0	–	–	1	5·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
35 to 40 -	120 to 125	„	12	–	–	2	6·0	–	–	2	2·0	3	2·0	–	–	–	–	1	2·0	–	–	3	2·0	–	–	–	–	1	8·0	–	–	–	–	–	–	–	–	–
35 to 40 -	125 to 130	„	4	1	4·0	–	–	2	5·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2·0	–	–	–	–	–	–	–	–	–
Chiefly at Shanghae -		„	99	12	2·7	3	2·7	11	3·2	5	3·4	20	3·8	13	3·8	6	3·5	–	–	1	2·0	–	–	5	2·0	–	–	4	3·0	–	–	4	3·0	2	1·5	3	3·0	10
30 to 35 -	120 to 125	„	54	3	9·0	4	6·5	10	4·2	3	6·3	5	5·0	7	6·1	4	4·0	3	3·0	2	6·0	3	5·7	1	4·0	–	–	–	–	2	8·0	3	10·3	2	7·5	1	1·0	1
N.W. coast of Korea Strait		„	45	5	2·2	–	–	4	2·3	–	–	10	3·2	3	4·0	–	–	1	5·0	1	2·0	2	1·5	3	2·3	–	–	–	–	2	4·5	3	3·0	2	3·0	4	1·3	5
S.E. coast of Korea Strait		„	135	9	2·7	16	3·1	30	2·3	8	2·5	6	1·3	2	2·5	3	2·0	3	1·7	10	2·0	3	3·0	11	2·2	2	1·0	4	1·8	2	2·5	2	4·0	2	1·0	7	1·6	15
30 to 35 -	125 to 130	„	45	4	3·5	7	4·6	4	3·8	1	3·0	4	6·0	4	3·5	1	2·0	–	–	2	4·0	2	4·0	1	3·0	2	3·5	1	1·0	2	5·5	3	4·0	4	3·5	2	2·0	1
35 to 40 -	130 to 135	„	15	–	–	1	1·0	–	–	–	–	2	3·5	2	3·5	2	2·0	–	–	1	3·0	–	–	2	4·5	1	4·0	2	3·0	–	–	–	–	–	–	1	2·0	1
Chiefly at Yokohama -		„	48	10	3·0	8	3·5	3	2·7	2	3·0	1	1·0	1	2·0	–	–	–	–	1	5·0	5	6·0	5	3·4	1	6·0	1	1·0	2	1·0	1	1·0	3	3·7	–	–	4
S. of Nipon	135 to 140	„	39	3	2·7	2	3·0	8	2·3	4	4·8	1	3·0	2	5·0	3	1·3	–	–	2	4·0	2	3·5	4	3·3	2	5·0	1	2·0	–	–	1	2·0	–	–	–	–	4
30 to 35 -	130 to 135	„	6	–	–	1	3·0	3	3·3	1	2·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
30 to 35 -	135 to 140	„	9	1	3·0	1	2·0	3	3·7	1	7·0	1	1·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	1
Gulf of Lian Tung -		Oct.	66	7	5·0	1	7·0	5	3·2	3	1·3	2	2.5	–	–	7	2·1	3	3·3	15	2·7	2	3·0	2	2·0	4	4·8	1	4·0	1	2·0	4	3·3	2	4·5	–	–	7
45 to 50 -	140 to 145 in harbour.	„	15	1	5·0	–	–	2	3·5	–	–	–	–	1	3·0	2	2·0	–	–	–	–	–	–	2	4·5	3	3·3	2	2·0	1	2·0	1	5·0	–	–	–	–	–
40 to 45 -	140 to 145 in harbour.	„	33	1	1·0	–	–	1	1·0	–	–	–	–	–	–	3	3·3	–	–	1	5·0	–	–	3	3·3	1	2·0	1	3·0	4	4·0	9	2·8	3	4·0	–	–	6

Position. Latitude, N.	Position. Longitude, E.	Month.	Total Observations.	Observations of Wind, referred to 16 Points, with Mean of Force (Scale, 0 to 12). N. O.	N. F.	N.N.E. O.	N.N.E. F.	N.E. O.	N.E. F.	E.N.E. O.	E.N.E. F.	E. O.	E. F.	E.S.E. O.	E.S.E. F.	S.E. O.	S.E. F.	S.S.E. O.	S.S.E. F.	S. O.	S. F.	S.S.W. O.	S.S.W. F.	S.W. O.	S.W. F.	W.S.W. O.	W.S.W. F.	W. O.	W. F.	W.N.W. O.	W.N.W. F.	N.W. O.	N.W. F.	N.N.W. O.	N.N.W. F.	Variables O.	Variables F.	No. of Calms.
At mouth of Peiho		Oct.	27	–	–	–	–	3	1·7	–	–	–	–	–	–	–	–	–	–	1	3·0	4	2·3	6	2·8	–	–	–	–	3	4·3	6	3·5	2	5·0	–	–	2
S. coast of Shangtung		,,	57	8	3·8	1	5·0	4	2·0	–	–	2	3·0	–	–	3	2·3	2	3·0	7	3·4	1	3·0	1	2·0	1	5·0	8	1·8	1	3·0	8	2·8	1	7·0	2	1·0	7
E. coast of Gulf of Lian Tung.		,,	12	3	4·3	–	–	1	3·0	1	3·0	1	6·0	–	–	–	–	–	–	2	4·3	–	–	1	4·0	2	3·5	–	–	–	–	–	–	–	–	–	–	1
35 to 40	120 to 125	,,	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5·0	–	–	–	–	1	3·0	1	3·0	–	–	–	–	–	–	–	–	–	–
Chiefly at Shanghae		,,	114	12	2·9	10	3·4	20	2·4	8	3·3	8	1·8	1	1·0	4	1·5	–	–	1	2·0	–	–	–	–	2	4·0	8	2·4	6	2·0	8	2·1	2	4·0	1	2·0	23
30 to 35	120 to 125	,,	12	4	4·0	3	2·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2·0	2	3·0	1	4·0	1	2·0	–	–	–	–
S.E. coast of Korea Strait		,,	63	8	3·0	11	3·3	21	2·1	7	1·7	3	1·7	–	–	3	3·7	2	3·0	1	6·0	1	4·0	–	–	–	–	–	–	1	1·0	1	3·0	–	–	–	–	4
30 to 35	125 to 130	,,	12	3	3·3	2	4·5	2	6·0	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	3·5	–	–	–	–
35 to 40	N.W. of Nipon.	,,	36	4	2·8	–	–	3	3·7	–	–	–	–	1	2·0	3	2·7	1	5·0	3	4·3	2	3·0	4	5·0	2	4·0	4	5·5	2	5·5	3	7·0	3	1·7	1	2·0	–
S. of Nipon	135 to 140	,,	23	–	–	3	3·0	2	1·5	1	1·0	–	–	1	1·0	1	4·0	1	1·0	1	1·0	–	–	–	–	1	7·0	1	2·0	2	7·0	1	1·0	2	1·0	–	–	6
At Oosima		,,	69	8	2·4	6	2·2	28	3·5	4	4·5	1	2·0	–	–	–	–	–	–	–	–	1	1·0	1	2·0	2	3·5	2	2·5	1	1·0	4	2·0	2	1·5	1	1·0	8
At Ninghai		Nov.	15	1	1·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	4	3·3	2	2·0	3	3·0	2	1·5	2	4·5	–	–	–	–	–
At mouth of Peiho		,,	18	5	4·2	–	–	–	–	3	3·7	2	4·0	–	–	–	–	–	–	–	–	1	5·0	3	3·7	2	5·0	–	–	–	–	2	6·0	–	–	–	–	–
35 to 40	115 to 120	,,	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5·0	1	2·0	1	2·0	2	2·5	4	2·3	1	3·0	–	–	–	–	1
S. coast of Shangtung		,,	63	10	2·7	4	5·0	6	3·5	–	–	1	3·0	–	–	3	2·3	1	3·0	3	2·0	–	–	7	2·0	1	3·0	1	1·0	1	5·0	18	4·0	2	6·0	–	–	5
E. coast of Gulf of Lian Tung.		,,	6	–	–	–	–	1	1·0	2	1·5	–	–	–	–	–	–	–	–	1	2·0	–	–	1	4·0	–	–	1	5·0	–	–	–	–	–	–	–	–	–
N. coast of Shangtung		,,	17	8	5·0	–	–	–	–	2	4·0	1	3·0	1	2·0	1	2·0	–	–	–	–	–	–	–	–	–	–	–	–	3	5·0	–	–	1	–	–	–	1
Chosan		,,	24	7	2·4	–	–	3	1·7	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	4·0	–	–	4	3·3	2	4·0	–	–	6
35 to 40	120 to 125	,,	13	–	–	1	7·0	–	–	–	–	1	2·0	–	–	1	4·0	–	–	–	–	–	–	2	1·5	2	2·0	–	–	1	2·0	1	1·0	–	–	–	–	3
Chiefly at Shanghae		,,	87	9	2·4	5	4·4	11	2·7	2	3·0	3	2·0	–	–	3	2·7	1	1·0	7	2·4	1	4·0	8	3·0	–	–	2	4·0	1	2·0	6	4·3	4	2·0	–	–	24
30 to 35	120 to 125	,,	38	2	4·0	4	3·8	2	3·0	–	–	2	4·5	–	–	–	–	–	–	–	–	–	–	2	3·0	1	2·0	5	2·6	1	4·0	9	3·8	5	4·0	–	–	5
S.E. coast of Korea Strait		,,	24	2	3·5	–	–	8	1·4	2	2·5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3·5	1	4·0	–	–	3	1·7	–	–	6
30 to 35	125 to 130	,,	21	–	–	4	2·5	2	2·5	2	3·0	–	–	–	–	1	2·0	–	–	–	–	1	4·0	–	–	–	–	–	–	5	3·2	3	4·0	1	4·0	–	–	2
35 to 40	130 to 135	,,	15	2	4·0	1	4·0	1	5·0	–	–	1	6·0	–	–	–	–	1	3·0	2	2·5	–	–	2	1·5	1	3.0	–	–	1	2·0	1	3·0	2	2·0	–	–	–
35 to 40	N.W. of Nipon.	,,	51	2	1·5	2	2·0	3	3·0	1	4·0	–	–	1	5·0	1	4·0	–	–	2	3·5	–	–	4	3·8	6	5·2	15	3·9	4	4·3	5	3·4	2	3·5	–	–	3
Chiefly at Simonosaki		,,	27	2	1·0	4	2·5	4	2·3	1	3·0	3	3·0	–	–	1	3·0	–	–	1	2·0	–	–	1	6·0	–	–	3	4·7	2	3·5	1	3·0	1	3·0	2	3·5	1
S. of Nipon	135 to 140	,,	15	5	1·4	–	–	3	3·0	1	3·0	2	2·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2·0	1	4·0	–	–	1
35 to 40	115 to 120	Dec.	18	–	–	–	–	1	3·0	2	3·5	–	–	1	2·0	2	2·0	–	–	3	2·0	–	–	4	1·5	–	–	2	1·5	1	2·0	1	4·0	–	–	–	–	1
S. coast of Shangtung		,,	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2·0	–	–	2	4·0	–	–	–	–	1	2·0	–	–	–
N. coast of Shangtung		,,	75	4	3·8	9	5·6	2	4·5	3	4·0	–	–	–	–	2	3·5	2	1·5	6	2·5	6	2·7	7	3·3	2	2·5	4	3·3	4	3·8	13	2·8	7	4·1	–	–	4
Chosan		,,	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4·0	1	7·0	2	3·0	–	–	–	–	–
35 to 40	120 to 125	,,	16	7	5·1	–	–	2	4·0	–	–	1	2·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4·0	–	–	2	7·5	3	5·0	–	–	–
35 to 40	125 to 130	,,	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4·0	–	–	1	4·0	–	–	–	–	–	–	–	–
Chiefly at Shanghae		,,	300	38	3·4	21	3·9	36	3·6	5	2·0	11	3·6	4	4·0	18	2·3	1	4·0	12	2·8	5	2·2	4	2·5	–	–	9	3·3	14	3·4	36	3·2	16	3·8	2	1·0	68
30 to 35	120 to 125	,,	27	4	1·0	–	–	1	2·0	1	4·0	1	6·0	2	1·0	1	1·0	–	–	1	6·0	1	3·0	1	2·0	–	–	–	–	1	2·0	7	4·1	5	4·0	–	–	1
N.W. coast of Korea Strait		,,	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	8·0	–	–	–	–	1	4·0	1	6·0	11	4·3	4	3·3	–	–	–
S.E. coast of Korea Strait		,,	17	2	3·0	1	1·0	2	1·0	1	1·0	–	–	2	1·5	2	1·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	6
30 to 35	125 to 130	,,	21	2	5·0	2	4·0	1	3·0	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	–	–	1	1·0	3	3·0	–	–	5	4·8	5	4·6	–	–	1
Chiefly at Yokohama		,,	24	6	2·7	–	–	1	1·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1·0	–	–	2	5·5	2	1·0	3	3·0	4	2·3	–	–	5
30 to 35	130 to 135	,,	6	1	6·0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	7·0	4	6·0	–	–	–	–
30 to 35	135 to 140	,,	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	7·0	1	6·0	1	5·0	–	–	–	–

Total Wind Observations for the Year.

	mths.																																			
Shanghae	12	1,372	199	–	94	–	146	–	42	–	91	–	43	–	117	–	28	–	44	–	12	–	31	–	4	–	41	–	29	–	122	–	60	–	37	–	232
S.E. coast of Korea Strait	11	509	66	–	40	–	78	–	24	–	24	–	5	–	15	–	11	–	23	–	10	–	36	–	8	–	13	–	7	–	13	–	13	–	16	–	107
35 to 40 - 120 to 125	11	157	13	–	8	–	10	–	4	–	10	–	4	–	10	–	5	–	8	–	7	–	8	–	8	–	15	–	10	–	10	–	11	–	1	–	15
30 to 35 - 120 to 125	12	357	40	–	32	–	34	–	15	–	22	–	18	–	15	–	16	–	12	–	8	–	9	–	9	–	14	–	17	–	38	–	32	–	9	–	17
30 to 35 - 125 to 130	12	279	23	–	25	–	29	–	18	–	15	–	9	–	8	–	4	–	11	–	15	–	10	–	5	–	19	–	16	–	18	–	23	–	3	–	18
30 to 35 - 130 to 135	9	102	6	–	4	–	7	–	9	–	4	–	3	–	4	–	2	–	2	–	2	–	5	–	3	–	9	–	3	–	13	–	10	–	4	–	12

[3280—750.—6/76.]
[2615.—250.—6/76.]

DIAGRAM I.

JAPAN

SOUTH EAST COAST LIGHTHOUSES

Mean Monthly Pressure Temperature & Rain.

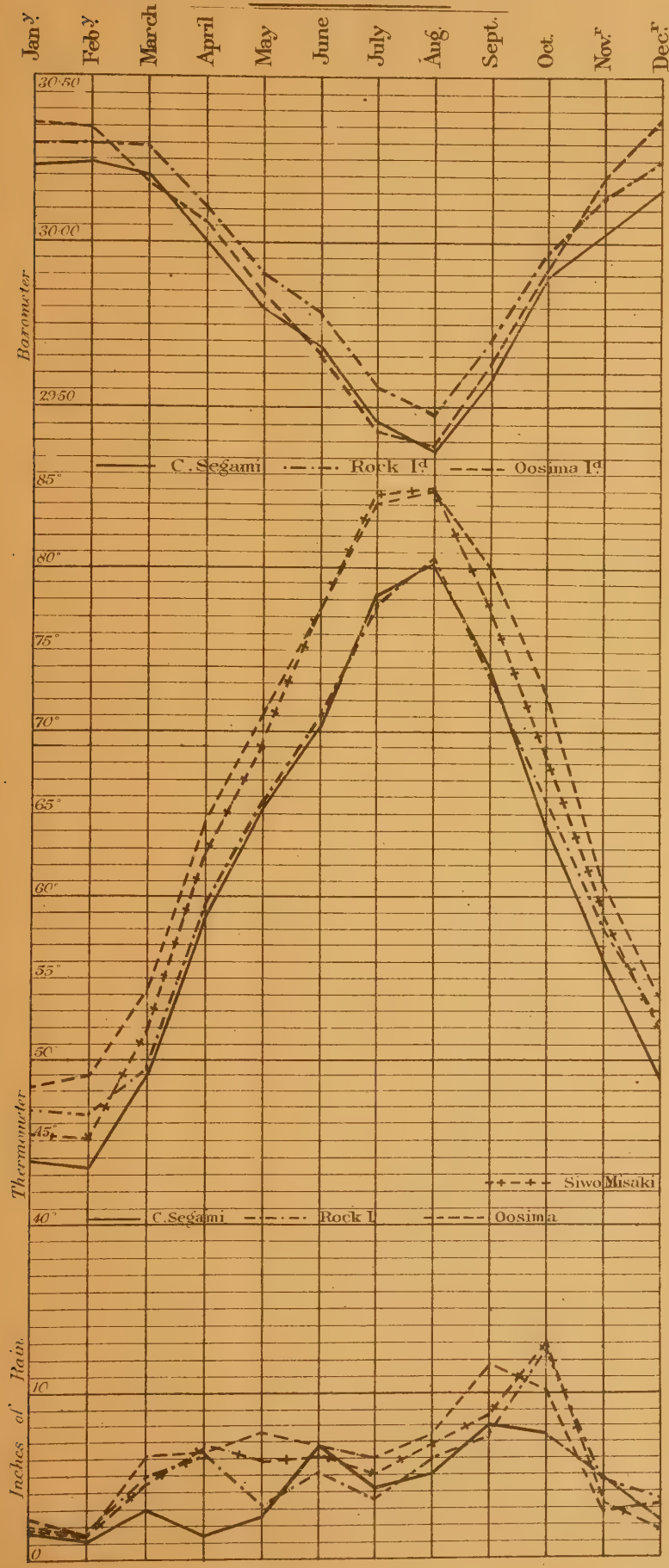
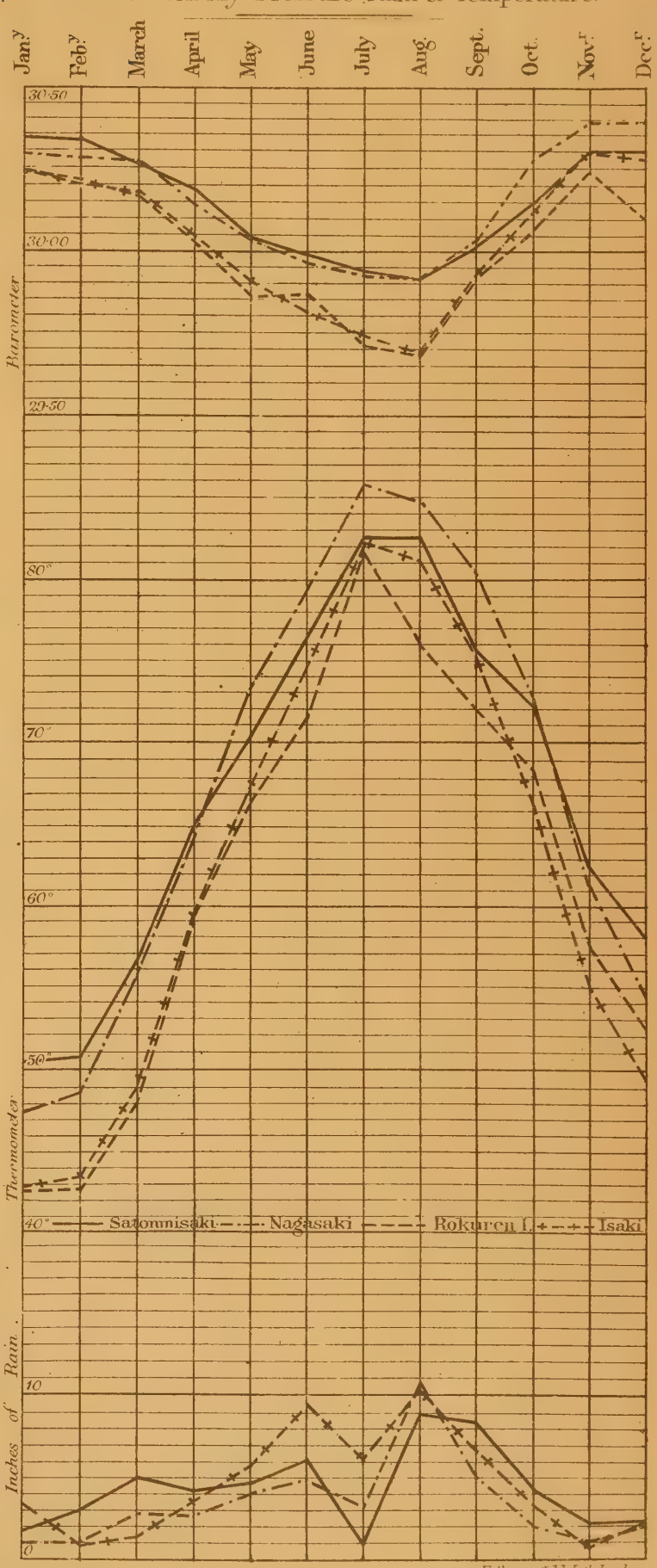


DIAGRAM II.

JAPAN

SOUTH WEST COAST

Mean Monthly Pressure Rain & Temperature.



F. Dangerfield Lith London.

DIAGRAM III.

JAPAN
INLAND SEA

Mean Monthly Pressure, Temperature & Rain.

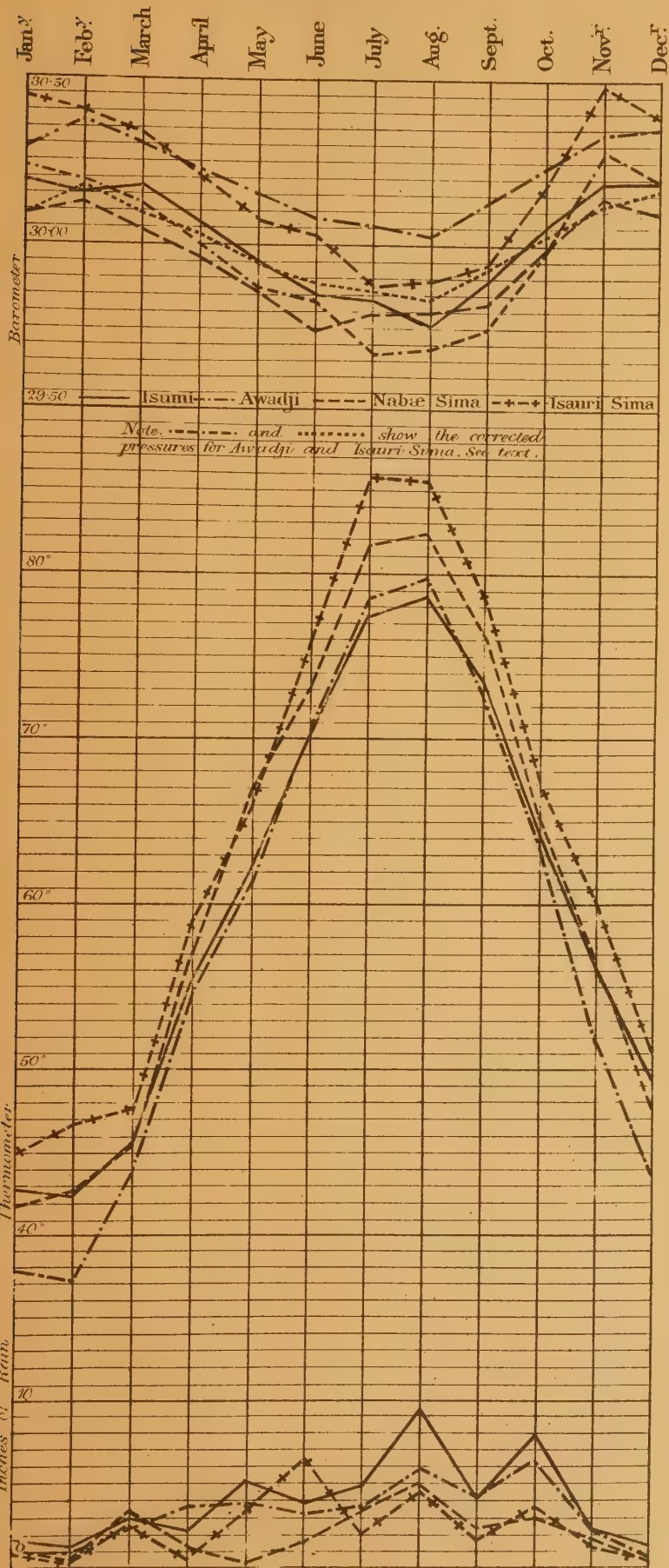
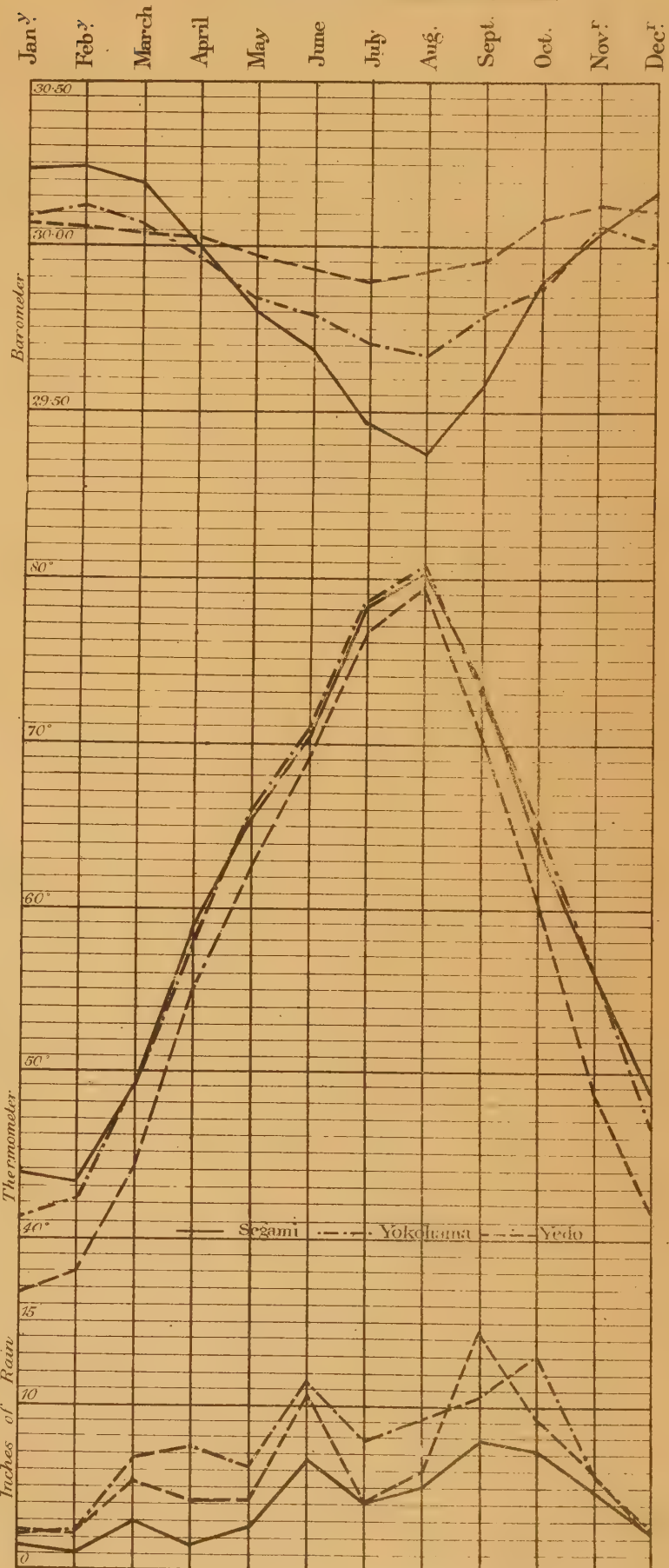


DIAGRAM IV.

JAPAN
GULF OF YEDO.

Mean Monthly Pressure, Temperature & Rain.



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PLAN

Showing the Mean Pressure and Prevalent Wind
for each Month
over the Southern portion of the

JAPANESE ISLANDS.

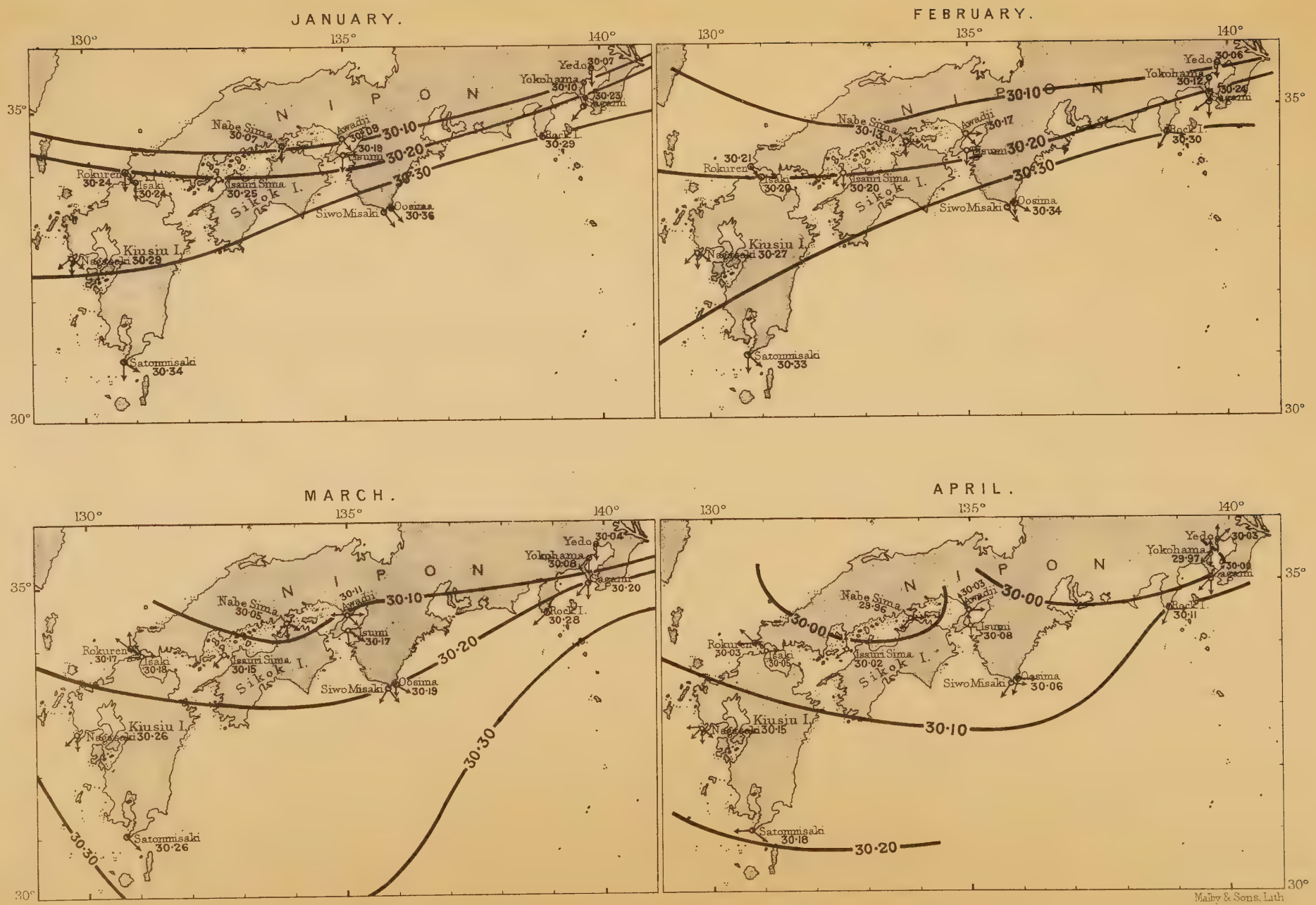

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Plate 1.

PLAN

Showing the Mean Pressure and Prevalent Wind

for each Month

over the Southern portion of the

JAPANESE ISLANDS.

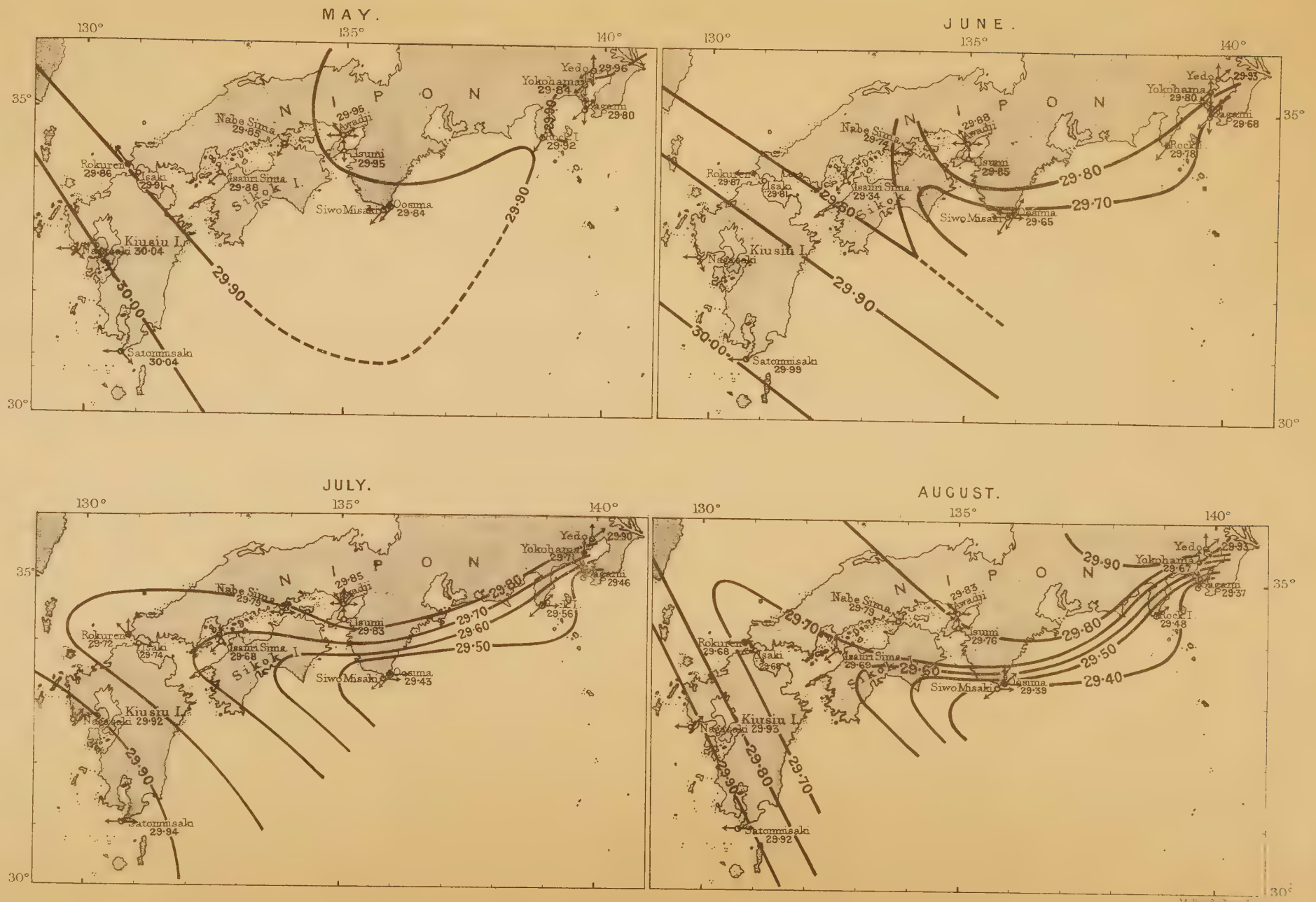

Plate 2

PLAN

Showing the Mean Pressure and Prevalent Wind
for each Month
over the Southern portion of the

JAPANESE ISLANDS.

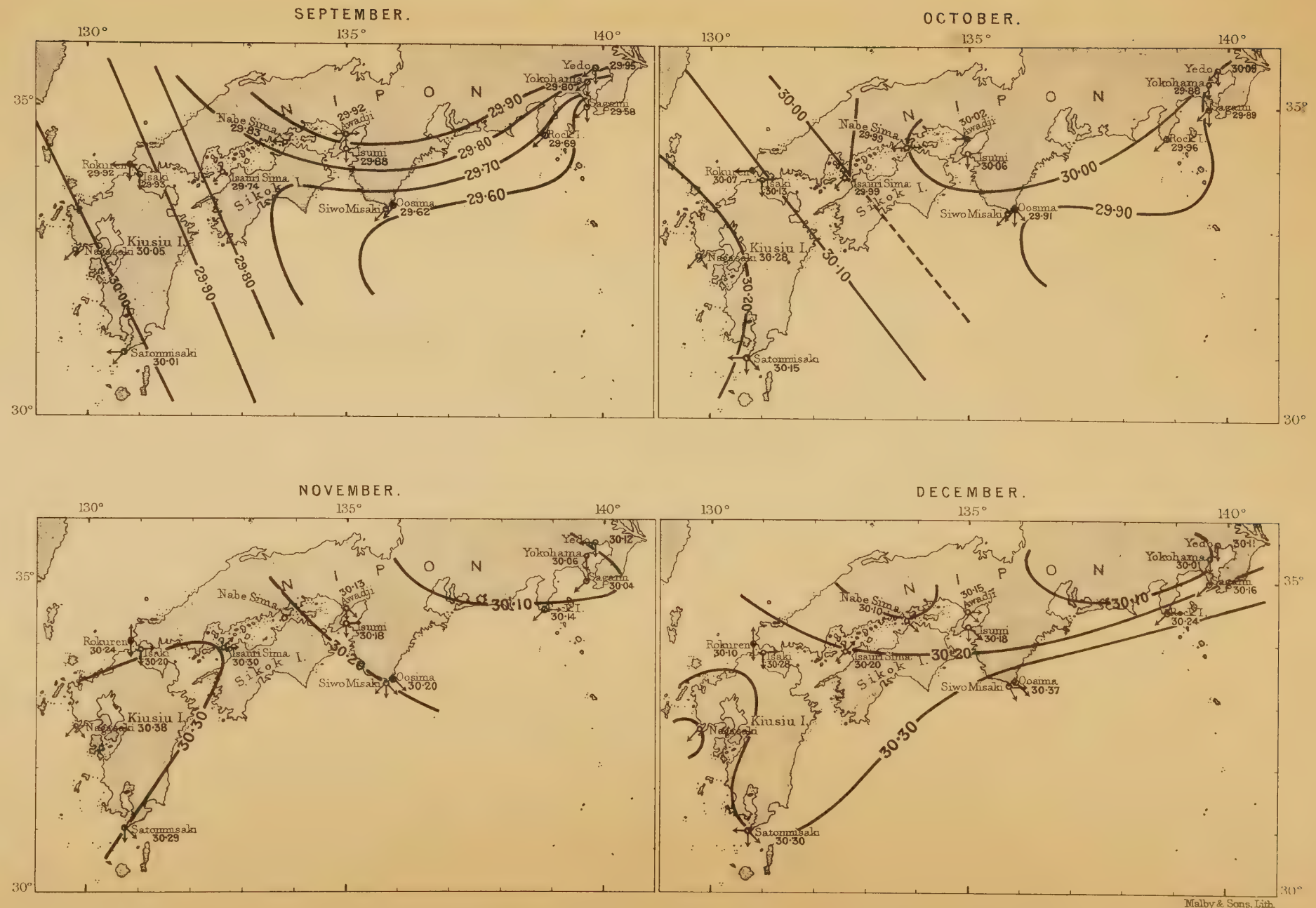

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Plate 3.

LIST OF PUBLICATIONS, &c.

Issued under the Authority of the Meteorological Committee.

OFFICIAL.

No. 1. Report for 1867. Presented to Parliament. Price 1*s.*
2. Instructions for Meteorological Telegraphy. New Edit. (1875.) Price 6*d.*
3. Fishery Barometer Manual. Price 6*d.*
4. Charts of Surface Temperature, South Atlantic Ocean. Price 2*s.* 6*d.*
5. Report for 1868. Presented to Parliament. Price 5*d.*
6. Report for 1869. Presented to Parliament. Price 10*d.*
7. Quarterly Weather Report for 1869.—Parts I. to IV. Price 5*s.* each. [Published by Stanford, Charing Cross.]
8. Barometer Manual. Price 1*s.*
9. Quarterly Weather Report for 1870.—Parts I. to IV. Price 5*s.* each. [Stanford.]
10. Report for 1870. Presented to Parliament. Price 10*d.*
11. Contributions to our Knowledge of the Meteorology of Cape Horn and the West Coast of South America, price 2*s.* 6*d.* [Stanford.]
12. Currents and Surface Temperature of the North Atlantic Ocean, from the Equator to Latitude 40° N., for each Month of the Year. With a General Current Chart. Price 2*s.* 6*d.* [Stanford.]
13. A Discussion of the Meteorology of the Part of the Atlantic lying North of 30° N. for the Eleven days ending 8th February 1870. Price, with Book of Charts, 5*s.* [Stanford.]
14. Quarterly Weather Report for 1871.—Parts I. to IV. Price 5*s.* each. [Stanford.]
15. Report for 1871. Presented to Parliament. Price 10*d.*
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20 Charts of Meteorological Data for Square 3. Lat. 0°–10° N., Long. 20°–30° W., and Remarks to accompany the Monthly Charts. Showing the Best Routes across the Equator each Month. Price 20*s.* [Stanford.]
21. Report of the Proceedings of the Meteorological Congress at Vienna. Price 1*s.* [Stanford.]
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25. Quarterly Weather Report for 1874.—Parts I. and II. Price 5*s.* each.
26. Report for 1874. Presented to Parliament. Price 6*d.*
27. Charts of Meteorological Data for the Nine Ten-degree Squares of the Atlantic, which lie between 20° N. and 10° S., and extend from 10° to 40° W., with accompanying Remarks. [In the Press.]
28. Contribution to the Meteorology of Japan.—By Staff-Commander Thomas H. Tizard, H.M.S. "Challenger." Price *s.*

NON-OFFICIAL.

No. 1. Report to the Committee on the Connexion between Strong Winds and Barometrical Differences.—By Robert H. Scott, Director of the Office. Price 6*d.*
2. Report to the Committee on the Meteorology of the North Atlantic.—By Captain H. Toynbee, Marine Superintendent. Price 1*s.*
3. Report to the Committee on the Use of Isobaric Curves.—By Captain H. Toynbee, Marine Superintendent. Price 1*s.*
4. Routes for Steamers from Aden to the Straits of Sunda and back. Translated from a Paper issued by the Royal Meteorological Institute of the Netherlands. Price 6*d.*
5 On the Winds, &c. of the North Atlantic along the Tracks of Steamers from the Channel to New York. Translated from a Paper issued by the Deutsche Seewarte, Hamburg. Price 6*d.*
6. Report of the Proceedings of the Meteorological Conference at Leipzig. Price 1*s.*
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8. Report on Weather Telegraphy and Storm Warnings, presented to the Meteorological Congress at Vienna. Price 6*d.*
9. Report of the Permanent Committee of the Vienna Congress for 1874. Price 1*s.* 6*d.*
10. On the Physical Geography of the part of the Atlantic which lies between 20° N. and 10° S. and extends from 10° to 40° W. A Paper read before the British Association at Bristol, in August 1875, by Captain Toynbee, Marine Superintendent.

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